# FEEDSTUFFS®

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 30—Number 39 | SEPTEMBER 27, 1958 | 1 Year $5, 2 Years $8


## Control Officials Set for Golden Anniversary Event

WASHINGTON — Program plans are all set for the golden anniversary convention of the Association of American Feed Control Officials.

The convention will be held Oct. 15-16 at the Shoreham Hotel in Washington, D.C.

Activities will get under way the evening of Oct. 14, with a meeting of the states relations committee at 7 p.m. Both feed industry representatives and control officials are urged to attend.

The formal opening of the convention will be at 1 p.m. Wednesday, Oct. 15.

**Opening Talks**

There will be a report by the association executive secretary, L. E. Bopst, College Park, Md.; an address by R. F. Kneeland, Jr., Food and Drug Administration, Washington, the association president, and the guest speaker will be W. E. Glennon, president of the American Feed Manufacturers Assn., Chicago.

The remainder of the first day will be taken up with reports of committees and investigators.

A special observance of the association's 50th anniversary will come at the Golden Anniversary banquet at 7 p.m. Wednesday, Oct. 15.

In the morning of Oct. 16 the main addresses will be: "Developments in Mineral Nutrition," by Dr. George

(Turn to CONTROL, page 119)

## *Broiler Prices Drop Further; Placements Show Decrease*

SALISBURY, MD.—The low broiler prices are 2½ months ahead of the usual seasonal drop. Last week the average price in Delmarva paid on the farm was 15.8¢ lb. The price did not get this low in 1957 until the week ending Dec. 14.

Last week's average broiler price was ½¢ lower than a week earlier and 2¢ lower than the price paid for the same week a year ago.

Nationwide, hatcherymen did not cut back their production last week. For 22 reporting states, the egg set was 37,732,000 or about the same as the week before. It was 11% above the corresponding week a year ago.

Broiler growers in the 22 states started 24,803,000 chicks. This was 16% less than the previous week but 2% above the corresponding week a year ago.

## Record Supply of Feed Grain, Other Concentrates Predicted

WASHINGTON — A 1958 growing season which has been termed by the USDA as "the best in years for feed crops" has assured a record supply of feed grain for the new feeding year beginning Oct. 1.

Total feed grain production has been estimated at 151 million tons, and this, with a carryover of 60 million tons and additional feed concentrate supplies estimated at 28 million tons, gives the nation a total supply of 239 million tons of feed grain and other concentrates to begin the new feeding year.

This huge supply—9% higher than in 1957-58 and 30% higher than the 1952-56 average—is added to pastures which continue to be good and a hay supply of 145 million tons, also the largest of record.

These estimates were issued by the U.S. Department of Agriculture in its Feed Situation report released recently. The report said these big supplies and the favorable livestock-feed price ratios of the past year or so are expected to bring an increase of about 5% in the number of grain consuming livestock to be fed in 1958-59, and heavier utilization of feed grains and other concentrates is in prospect.

"The big feed grain crop this year, however, is fully ample to meet these heavier requirements," the report said, "and probably also will boost carryover stocks into 1959-60 by about 25% over the prospective carryover into 1958-59." Declines in over-all feed prices are forecast.

**Record Carryover**

The 1959-60 carryover is expected to be around 75 million tons, a cushion of almost a full half-year supply. (The supply and utilization picture can be seen in Table 1.)

Record yields per acre of the feed grains more than offset smaller acreages to bring about the production increase. The anticipated feed grain production of 151 million tons is 8 million more than the record crop of a year ago.

The barley and sorghum grain crops are the largest of record and the corn crop is only slightly below 1948. The oats crop, while not a record, is 8% over last year.

The Oct. 1 feed grain carryover of 60 million tons is also a record. It is 11 million tons higher than a year ago and almost twice the 1952-56 average.

Estimated total feed concentrate supplies of 239 million tons are 9% larger than last year and 55 million over the 1952-56 average. With the bumper feed supplies, the rate of feeding is expected to continue heavy, the report said, although it may be lower than in 1957-58 when large

(Turn to SUPPLY, page 8)

## Oils Donation Program Seen As Soybean Meal Stabilizer

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — A government edible oils give-away program now being planned is seen as a soybean market stabilizing influence, and officials say that the soybean meal from the additional crush of beans will not be a price breaking factor.

It was learned this week that U.S. Department of Agriculture officials have submitted to the Commodity Credit Corp. advisory committee a donation program for edible oils under Title 2 of Public Law 480 for domestic and foreign distribution in the fiscal year ending next June 30.

The program would represent the equivalent of 25 to 50 million bushels of beans.

The CCC advisory committee is expected to approve the plan.

The public donation of edible oils may amount to an additional 500 million pounds of oil. This would be in addition to expected exports of oils under Title I of PL 480, amounting to an estimated 1 billion pounds for the current oil crop year.

**Additional Meal**

USDA officials say that the meal from the additional crush of beans will not seriously disrupt the meal

(Turn to SOYBEAN, page 119)

## 200-Member Texas Broiler Assn. Votes To Join Union; Expansion Plans Told

CENTER, TEXAS — One hundred and four members of the Texas Broiler Assn. voted Sept. 20 at a meeting here to allow the TBA board of directors to affiliate with a labor union.

It was the first time that a group of Texas farmers had become affiliated with organized labor, and the second time for any farm group in the nation. A group of dairy farmers in the New York milkshed affiliated with a union a few years ago.

Delegates to the annual membership meeting of the TBA, which has a paid membership of approximately 200 broiler growers, voted 104 to 1 to pass a resolution empowering their 10 directors to decide whether they should become affiliated with the Amalgamated Meat Cutters and Butchers Workmen, AFL-CIO.

It was reported that about half of the 100-odd members represented in the Sept. 20 vote on unionizing, were represented by proxy. The association has most of its members in east Texas and has had, off and on, up to 2,500 members among Texas broiler growers, observers said.

J. B. McMillan of Garrison, Texas, president of the TBA, said that for all practical purposes the membership vote decision amounts to an affiliation with the union. At a previous meeting, directors indicated they favored the move.

**Union Speakers**

Mr. McMillan said the directors will meet with union representatives in about three weeks to work out

(Turn to TEXAS, page 119)

## FEEDSTUFFS *Features This Week*

**MILL MANAGEMENT:** Ground rules for helping elevator and feed mill managers spend more time managing appear on **page 10.**

**LINEAR PROGRAMMING:** How linear programming can be applied in the feed industry is outlined on **page 26.**

**NUTRITION:** Two articles dealing with energy restriction in rations of poultry flock replacements appear on **page 32.**

**BULK FEED PRODUCTION:** How one man operates a large push-button feed mill is described on **page 44.**

**FEED DEALER SURVEY:** Current problems confronting feed dealers are reported on **page 72.**

### — REGULAR FEATURES —


| | | | |
|---|---|---|---|
| Joe Brooks | 18 | Worth Looking Into | 88 |
| Feed Service Bulletin Board | 52 | Feedstuffs' Index for August | 92 |
| Putting Research to Work | 56 | Up or Down | 103 |
| Convention Calendar | 80 | Feed Markets in Detail | 116 |


## Corn Support Set For Non-Compliers

WASHINGTON—The U.S. Department of Agriculture has announced that the low support level for 1958-crop corn grown by non-compliers will be $1.06 bu. This level represents a reduction from the previous low loan level which is in proportion to the reduction this year in the loan for compliers with acreage allotments. It is 4¢ bu.

Trade sources said the USDA decision will make little, if any, difference in the corn market.

Previously it had been predicted that the low loan level would be $1.10 bu. This was the majority attitude of the Commodity Credit Corp. advisory committee, but it appears that this decision was rejected by the top USDA staff.

# FEEDSTUFFS®

A Weekly Newspaper Published by
THE MILLER PUBLISHING CO.
2501 Wayzata Blvd., Minneapolis, Minn.
Address Mail to:
Box 67, Minneapolis 40, Minn.
Telephone FRanklin 4-5200
All Offices Serviced by Bell System Teletype

EDITORIAL STAFF—George L. Gates, Editor; Roger Bergiund, Managing Editor; John Cipperly, Washington Correspondent; Emmet J. Hoffman, Merchandising Editor; John S. Franklin, James E. Sharon and James H. Ross, Editorial Assistants; Duane F. McKenzie, Research Director.

WASHINGTON CORRESPONDENT—John Cipperly, 604 Hibbs Building, Washington, D. C., Telephone, Republic 7-8534.

ADVERTISING STAFF—Wilfred E. Lingren, Advertising Director; Carl R. Vetter, Advertising Department Manager; Bruce A. Kirkpatrick, Advertising Production Manager; Leland C. Hubert, Assistant Advertising Production Manager; R. Dale Swenson, Promotion Manager.

BUSINESS STAFF—Martin E. Newell, Chairman of the Board of Directors; Milton B. Kihlstrum, President and Treasurer; Wilfred E. Lingren, Executive Vice President; Don E. Rogers, Vice President; Paul L. Dittemore, Vice President; Donald G. Neth, Secretary; T. A. Gaden, Circulation Manager; James G. Pattridge, Assistant Treasurer; Richard L. Ostlund, Office Manager; Walter O. Buchkosky, Production Superintendent.

BRANCH OFFICES—SOUTHWEST, Martin E. Newell, Manager; Thomas E. Letch, Assistant Manager, 612 Board of Trade Bldg., 1003 Wyandotte St., Kansas City 5, Mo. (Tel. Victor 2-1350); EASTERN STATES, Paul L. Dittemore, Manager; George W. Potts and James W. Miller, Advertising Sales Representatives, Suite 3214, 551 Fifth Ave., New York 17, N. Y. (Tel. Murray Hill 2-2185); CENTRAL STATES, Don E. Rogers, Manager; Henry S. French, Assistant Manager; Amos W. Standish, Advertising Sales Representative, 2832 Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. (Tel. Harrison 7-0515); NORTHWEST, Paul A. Anderson, Advertising Sales Representative, P. O. Box 67, Minneapolis 40, Minn. (Tel. Franklin 4-5200).

Correspondence regarding subscriptions, changes of address, etc., should be sent to Circulation Manager, Feedstuffs, Box 67, Minneapolis 40, Minn. Single copies 50¢. Subscription rates: One year $5, two years $8, in the U.S., U.S. possessions, Canada and Pan-America. Add $3 a year for postage to other countries. Readers are urged to give prompt notice of change of address and to anticipate future changes by at least two weeks' advance notice. Ask postman for form 22-S. Feedstuffs accepts subscriptions only through its own offices; no subscription solicitors are employed or recognized. Associated publications: The Northwestern Miller, The American Baker, Milling Production, Croplife, Farm Store Merchandising.

Entered as second-class matter Feb. 25, 1947, at the post office at Minneapolis, Minn., under the Act of Mar. 3, 1879

The regional circulation of this issue is concentrated in the southwestern states


## Eyes on Texas

**FEED MEN MORE THAN LIKELY** will read with great interest and more than a little uneasiness the report elsewhere in this issue that the Texas Broiler Assn. has given its board of directors permission to affiliate with the Amalgamated Meat Cutters and Butchers Workmen of North America, AFL-CIO. According to news reports, this approval (104-1) for all practical purposes amounts to members of the association becoming members of the union. Directors previously had indicated they favored the move, and the president of the TBA strongly advocated the union affiliation.

Meetings between union officials and the association board of directors are planned shortly to work out methods of dues collection and other details of the new affiliation.

This new development in the U.S. broiler industry surely will cast a new light on operations of feed manufacturers and others who have been writing the contracts for production of birds. While Texas is just one of the 22 broiler areas rated as "principal" in statistical reports, it is a high-ranking one from the standpoint of production. What develops among growers there undoubtedly will attract the attention of growers elsewhere. Indeed, an official of the union declared that "we have to go into other areas as rapidly as possible."

**APPROVAL OF THE TEXAS DEAL** was preceded by a zealous campaign conducted by J. B. McMillan, president of the TBA. Some of his comments to members in a letter dated Sept. 9 indicate the strong feelings injected into the union affiliation move. Wrote Mr. McMillan:

"In our modern day, with all groups organized for their own protection it is simply economic suicide for us to attempt to stand alone against the vast combinations of wealth and power who are determined to drive all farm producers out of the broiler business and take it over as their own private property. They will do it, too, if you let them. But you can save your broiler investments for yourselves and your children if you will get behind your organization and support it. You can save it no other way.

"TBA has been organized only four years, and while it has done its best and has accomplished many things for Texas growers, we are weak financially, and no organization so young could win more against the powerful combines, backed by billions of dollars, without a long and bitter fight running over years. And, as we do not have the time for such a fight on to victory, we have sought ways to protect ourselves now before more and more of us are wiped out. That is to say that we can bring you now the all-out support of one of the most powerful organizations in America and thereby guarantee each of you a fair and reasonable share in the broiler dollar. Do you want a fair price for your work and investments? It is yours for the asking."

**THESE GENEROUS PROMISES** must have had a great deal to do with the practically unanimous acceptance of Mr. McMillan's recommendations to affiliate with the AFL-CIO.

In his letter, Mr. McMillan referred at some length to the effect joining with 18 million AFL-CIO workers would have on increasing consumption of broilers. "Even if they did not buy an extra chicken each week, they would certainly buy far more broilers than they ever bought before because they will all know that TBA members are fellow workers, affiliated with their own great organization."

This could be a factor influencing the Texas growers, but just as sure as chicken makes a delicious meal, this isn't the only way that Mr. McMillan and union officials expect to help the growers. Texas broiler operators, unless something not now anticipated develops to change the minds of TBA directors, undoubtedly will be facing collective bargaining. How strong this effort can be is not known for certain as it depends on what portion of all growers in the state belong to the TBA or are likely to join it.

**MANY PEOPLE WHO HAVE BEEN** studying the broiler industry can perhaps say, "We told you so." For example, here is a comment made a few months back by Rep. Charles Brown (D., Mo.) who headed the congressional investigation of the poultry industry:

"Advocates of contract growing say that it's a cheaper and more efficient way to produce broiler meat. No one can tell yet whether that is absolutely true or not, because contract-growing is new. Only time will tell what 'sharecropper' growers will want in the way of minimum wages, paid vacation time, health insurance benefits, etc. Wait until you see what all the costs are going to be before saying that contract growing is cheaper and more efficient."

Others, too, have felt that the fast-paced economic upheaval in the broiler industry could lead to organization patterns similar to those in industrial plants. Cost factors not yet contemplated could change considerably the conduct of the broiler industry. Feed men will do well to recognize, for their own well-being, what has motivated the Texas broiler men and make plans accordingly.

## A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

**The nation's formula feed business showed a rather mixed trend this week as some areas reported continued good business and others saw sales drop off. In the Northeast, dairy volume dropped and demand for turkey feeds fell, but the Southeast continued to report good business despite the falling broiler market. Hog feed demand continued to be good in all areas, however, and layer feeds are showing an improvement. Anticipated increases of both layer and hog numbers portend a good outlook for these feeds. Optimism prevails in the industry in most areas because of a general feeling that demand will pick up substantially within the next two or three weeks. The index of feedstuff prices climbed to 82.5 compared with 81.9 the previous week and 77.1 a year earlier, but the feed grain index dropped to 65.6, compared with 66.5 a week earlier and 68.5 a year ago. (Ingredient prices in detail on pages 116-118.)**

### Northwest

Business was about unchanged for feed mills this week. Instructions were a little lighter late in the week, but the week's total volume was equal to or better than a week before.

"Unchanged" means "good" business, however, as the mills reported their September production far ahead of the same month a year ago as well as much improved over August. Some mills are setting September records.

Hog feed volume has been extremely good, and the outlook continues to be good with a big winter pig crop in prospect.

Turkey feed volume is also excellent. No change has been noted, and it is believed that sales will possibly continue later this fall because of the large late hatch. Egg feeds are showing a "spark," representatives said, and there is a slight pickup in dairy and cattle feed, but nothing much is expected until later in the fall.

Optimism continues high. Representatives said there is evidence that the buying done by dealers has been to handle immediate demand rather than for inventory. It is believed a push to build inventories may begin very soon.

Price lists for the coming week will be unchanged with some increases in high protein feeds.

### Southwest

Though generally a little slower than last week, formula feed business in the Southwest is good this week. Most mills will run normal shifts five days, with some running a sixth day to keep the order backlog down going into next week.

In some instances a reduction in broiler tonnage, following the drops in placements, has been felt. Others find that the turkey feed movement has peaked and is showing signs of slackening off. Hog feed and pig starters are moving at a good pace, but there has been no particular increase. And cattle feed business of sizeable volume has still not materialized, the good conditions of pasture apparently causing delays in the movement of cattle to feed lots.

Some pick-up in dairy feed has been detected, and layer rations are in good demand.

A possible reason cited for the little slower pace this week is that feeders and dealers are anticipating a price reduction as feed grain harvest nears. This harvest has already started in some places and this also might be one of the reasons why demand is not quite so urgent, as farmers turn their attention to that phase of their operations.

Price lists for next week will be mostly unchanged to up as much as $2 on some high protein feeds. Soybean meal, dehydrated alfalfa and millfeeds are among the ingredients that are higher. Grains are on the weaker side, and some heavy carbohydrate feeds might be off slightly.

### Northeast

Turnover wasn't quite as good as in the previous week, and if the sales trend continues formula feed manufacturers may lose a day's operating time next week.

Dairy feed demand is beginning to weaken under the use of afterfeed on the farms. Turkey feed volume is also slipping as more birds are slaughtered and stored in freezers for the holiday season. When an increasing number of 20 to 22-lb. turkeys are withdrawn from the feed market it puts quite a dent in the manufacturers' tonnage.

However, one trade source said, "It's surprising that the market has held up as well as it has."

Egg mashes accounted for the bulk of the sales and broiler feeds the least.

The broiler market remained in the doldrums, with the average price in the East at 15½¢ lb.

Eggs were firm, with most prices unchanged.

There wasn't too much change in the ingredient market. Corn was off 2¢ and buyers are "staying close to the shore" until the new crop—with its lower prices — comes in. Oats edged 1¢ lower and barley and feed wheat were firm.

Soybean oil meal rose $1 for the nearby delivery. Linseed oil meal and cottonseed oil meal were firm but unchanged. Gluten meal was unchanged.

Fish meal continued strong and scarce. Meat scraps were weak and off $2.50.

Brewers grains advanced 50¢. Distillers grains held about steady. Hom-

(Turn to MARKETS, page 120)

# our service and products help you produce

# BETTER FEEDS

**Peter Hand Research Farm**

- **Progressive nutritional research**
- **Practical farm testing and evaluation**

The often-dramatic new developments of science hold the answers to many of your practical problems. Yet, most feed nutritionists and manufacturers simply do not have the time and facilities to test and evaluate all these discoveries for themselves. Today, Peter Hand can greatly expand your testing program and expedite your evaluation of these new developments.

The Peter Hand Foundation acts as your clearing house on nutritional developments. We study and develop formulas and products for you, based on work at our own research farm and laboratory, and upon latest findings from universities. Current research results from all sources are evaluated by the Foundation staff. These developments are then further studied under practical conditions at our applied research farm.

Consider The Peter Hand Foundation as part of *your own* research program, ready to serve you now!

**Check the products that interest you and mail this coupon now. We will be happy to send you full information.**

**PETER HAND FOUNDATION**

*Division Peter Hand Brewery Co.* © 1958 P.H.B. Co. Dept. F-9-27

1000 W. North Ave., Chicago 22, Ill. • MOhawk 4-6300

- ☐ **Peter Hand FW-Premixes** (Vitamins-Antibiotics-Unidentified Growth Factors)
- ☐ **Peter Hand Proven Premixes** (5 and 10 lb. batch size)
- ☐ **Peter Hand Aqua Solva**— Water Soluble Vitamins and Antibiotics
- ☐ **P.H. Vitamin A**
- ☐ **P.H. Vitamin $D_2$**
- ☐ **P.H. Vitamin $D_3$**
- ☐ **P.H. Vitamin E**
- ☐ **P.H. Riboflavin**
- ☐ **P.H. Pantothenic Acid**
- ☐ **P.H. Choline Chloride**
- ☐ **P.H. Komplex K**
- ☐ **P.H. Vitamin $B_{12}$**
- ☐ **P.H. Pepsin**
- ☐ **P.H. Arsanilic Acid**
- ☐ **P.H. Procaine Penicillin**
- ☐ **P.H. Bacitracin**
- ☐ **B.H.T.** (Koppers)
- ☐ **Methionine** (Du Pont)
- ☐ **Lipamone** (White Laboratories)
- ☐ **Rumen Microorganisms** (Natural and cultured)
- ☐ **GP 101 with Multiform** (Unidentified Growth Factors)
- ☐ **Custom Premixes** (To your exacting specifications)

**Peter Hand Foundation, 1000 W. North Ave., Chicago 22, Ill.**

Please send information on the items checked above to:

NAME ..... TITLE .....

COMPANY NAME .....

ADDRESS .....

CITY ..... ZONE ..... STATE .....

# 200 Hear Nutrition Talks At Arkansas Conference

By THOMAS E. LETCH
Feedstuffs Staff

FAYETTEVILLE, ARK.—A record registration of more than 200 feed people from eight states, attracted to the eighth annual Arkansas Formula Feed Conference on the University of Arkansas campus Sept. 18-19, heard college and industry scientists talk about recent nutrition and management developments.

Evaluations of a number of feed additives were made and projects to test new products were reviewed. Among the information and opinions to come out of the meeting were the following:

Terephthalic acid increases markedly the absorption of antibiotics from the intestinal tract into the blood stream, though there is not universal agreement as to why.

All coccidiostats are not equally effective for the different types of coccidiosis.

Very high fat rations can produce top gains in broilers, and swine can also utilize fat in their feed.

The high energy diets put greater emphasis on protein quality and amino acid balance.

Such waste farm products as chicken litter, rice hulls, cotton field refuse and low quality hay can be profitably used in feeding beef cattle.

There is need for knowledge as to how antibiotics promote growth at low levels and what reasonable predictions can be made for their continued effectiveness.

Only a few substances can influence broiler and egg pigmentation.

There is need for a test to determine whether or not a fat is toxic so that the industry can avoid outbreaks of mortality in broiler flocks such as occurred last winter.

Here are summaries of the conference talks and discussions:

**CONTROL OF AIR SAC DISEASE IN BROILERS — Dr. E. H. Peterson, University of Arkansas:** Chronic respiratory disease (CRD) represents a group of diseases occurring together or in sequence with the central infection caused by the PPLO bacillus. The ultimate objective is the total elimination of the PPLO bacillus from breeder and hatchery populations.

To get the bird through the critical stress period without CRD is possible through high level administration of broad-spectrum antibiotics, Terramycin and Aureomycin. Amounts required range from 500 up to 2,000 grams per ton, making such programs too costly for practical application.

It has been discovered that activity of these drugs can be increased by including terephthalic acid in the feed along with the antibiotic.

Terephthalic acid has no action against the air sac disease, but has the capacity to increase absorption of antibiotics from the intestinal tract into the blood stream. The action varies with the antibiotic. In the case of Aureomycin, terephthalic acid or "TPA" increases absorption at least four times, and makes the antibiotic at least four times as effective. Terramycin is multiplied no more than two times at most. The same is true of erythromycin.

The control program for CRD being developed at Arkansas for broilers consists of the administration of Aureomycin (Aurofac-10) in the feed from day-of-age through the third week. 200 or 250 grams of Aureomycin per ton in the mash along with 8 lb. of terephthalic acid seems to be about right.

Studies are being made on the possibility of producing PPLO-free breeding stock with this Aureomycin-terephthalic acid principle.

(It was brought out that the use of terephthalic acid has not been approved by the Food & Drug Administration.)

(Dr. J. F. Hare, Chas. Pfizer & Co., Terre Haute, Ind., explained some of the basic work Pfizer has done with increasing the amount of antibiotic absorbed by the blood stream. They have found that calcium seems to be a substance that cuts down the absorption and that the use of terephthalic acid seems to neutralize that effect of the calcium.)

**FEEDING VALUE OF NEW ANTIBIOTICS FOR LIVESTOCK AND POULTRY: ERYTHROMYCIN—Dr. Jerry A. Kolar, Abbott Laboratories, North Chicago, Ill.:** Interest in erythromycin as a low-level feed additive has been stimulated by reports that "new" antibiotics (erythromycin and oleandomycin) promoted growth of chickens and turkeys while older antibiotics did not. These findings were interpreted to mean that the "microorganisms against which antibiotics act to stimulate growth of chicks and turkeys have developed a resistance to the antibiotics that have been used frequently as diet supplements in our laboratories," McGinnis and Jensen reported.

Tests by Abbott have dealt with tolerance of swine and poultry to erythromycin and its effect on growth. Growing swine have a strong dislike for the antibiotic's bitter taste and would not accept a feed containing more than 30 grams per ton. With turkeys it was found that 10 to 100 grams per ton were well

(Turn to ARKANSAS, page 115)

Fred W. Hoover, Jr.

## Fred Hoover Elected Director of AFMA

CHICAGO—Fred W. Hoover, Jr., president of the Albers Milling Co., Los Angeles, has been elected to the board of directors of the American Feed Manufacturers Assn.

He replaces Troy V. Cox, who recently retired from the board. The unexpired term, being filled by Mr. Hoover, extends through the 1960 annual meeting.

Mr. Hoover, at 40, is one of the younger presidents of a major milling company. He started with Albers in 1938 as a plant foreman. In succession he became plant superintendent, general production manager, executive vice president and president. He is also a director of the Carnation Co.

He is a graduate of the University of California, attended the University of Washington, and took postgraduate work at Harvard University.

## Fred W. Thomas Joins Spencer Kellogg Firm

BUFFALO, N.Y.—The election of Fred W. Thomas to the position of executive vice president of Spencer Kellogg & Sons, Inc., Buffalo, has been announced by Howard Kellogg, president.

Mr. Thomas served in several capacities in the Larro Feed division of General Mills, Inc., becoming director of the division and executive administrator of the General Mills farm service division.

In 1948 he became president of Central Soya Co., Inc., Ft. Wayne, Ind., and resigned after six years to devote full time to his personal interests.

Mr. Thomas also spent time in Washington as the first representative of the feed manufacturing industry called to work in the Office of Price Administration, where he was price executive in charge of a large segment of industry.

Mr. Thomas served for many years as a director of the American Feed Manufacturers Assn., and was elected chairman of the AFMA board in 1948 and again in 1949.

## Dr. E. L. Butz Elected Purina Director

ST. LOUIS—Dr. Earl L. Butz, dean of the school of agriculture at Purdue University, Lafayette, Ind., has been elected a director of the Ralston Purina Co., St. Louis, according to an announcement by Donald Danforth, chairman of the board of directors.

Dr. Butz will fill the unexpired term of Dr. C. A. Elvehjem, University of Wisconsin, who relinquished his directorship upon his recent election to the presidency of the University of Wisconsin.

Dr. Butz served as assistant secretary of agriculture under Secretary Ezra Taft Benson before returning to Purdue University last year.

## Call Meeting to Discuss Fatty Materials in Feed

MEMPHIS, TENN. — Representatives of the National Cottonseed Products Assn., Inc., and other interested industries will meet in early October to review plans for practical, workable definitions and standards for fatty materials in feeds.

For the past year, the association's uniform feed laws committee and chemists committee have been working with feed control officials and other industry groups in this matter.

During the October meeting, the groups will review definitions that have been tentatively drafted. It is hoped that the conference can agree upon definitions for presentation to the annual meeting of the Association of American Feed Control Officials in Washington, D.C., on Oct. 14-16.

## Taste Engineering to Handle New Additive

CHICAGO — Taste Engineering, Inc., Chicago, has announced that it will handle distribution of Algit 60-12 in major areas of the U.S. Algit 60-12 is a new vitamin-mineral feed and pet food supplement, processed from certain Norwegian seaweeds, which was announced recently by Algit, Inc., Chicago.

Taste Engineering until now has specialized in feed and food flavor applications, and this is its first venture into the feed ingredient area, the company announced. Other feed ingredient products will be announced in the near future.

### ARTHUR J. MANN DIES

CLINTON, MO. — Arthur James Mann, 76, formerly president of the Missouri Grain, Feed & Millers Assn., died recently after a long illness. A veteran grain dealer here, he had also served as mayor of Clinton.

## New Headquarters Building Opened by Wirthmore Feeds

By GEORGE L. GATES
Editor of Feedstuffs

WALTHAM, MASS. — Approximately 1,000 visitors were guests Sept. 25 of Wirthmore Feeds, Inc., at its new headquarters building. City and state dignitaries, agricultural officials, faculty members of agricultural schools, veterinarians and the agricultural press were on hand to tour the new facilities.

The two-day affair included an agricultural press tour of the firm's modern research farm in nearby Berkley, Mass. At the home office "grand opening," visitors were greeted by Robert F. McLeod, president, and were shown through the general offices, new advertising and printing facilities, and the research laboratories.

The building, near Boston on Route 128, is an attractive brick and steel structure. It commands an unusual view of wooded fields and the Cambridge reservoir. Its 50,000 sq. ft. of floor area houses the office and executive staff of the company. Large air-conditioned sections of the research department's quarters provide facilities for feeding and raising poultry under precisely controlled conditions, and for research with other farm animals and feeds. Wirthmore's parent organization, Corn Products Refining Co., maintains a New England regional sales office in the building.

Miss Bernice Watson of Dexter, Maine, and 1958 Maine poultry queen, officially opened the new building. As company officials and guests looked on, the attractive 18-year-old weighed a modern broiler. A barbecue luncheon was served following the official opening.

The new building consolidated departments which were previously scattered. The executive office was formerly in the Grain Exchange Building at 177 Milk Street, Boston. The retail division headquarters moved to Waltham from Greenfield, Mass., the research laboratories from Lawrence, Mass., and the new advertising and engineering departments from Malden, Mass.

"The activities carried on here," said Mr. McLeod, "are making significant contributions to the continued improvement in poultry and livestock nutrition. Our research and production efforts are devoted to giving the farmer the finest quality feeds at the lowest possible cost. Today the per capita consumption of high grade meat, milk and eggs is higher than ever before in our nation's history. This is directly due, I believe, to the modern farmer's ability to produce these foods abundantly and at a lower and lower cost in relation to the average householder's food budget. This kind of progress has been vitally dependent upon the development of improved feeds."

Wirthmore operates eight feed mills and distributing centers throughout the Northeast, in 17 states extending as far south as the Carolinas. Its feeds are distributed by about 900 independent dealers and 90 company-owned stores.

MANEY BROS.
MILL & ELEV. CO.
Minneapolis, Minnesota
Distributors in the Upper Midwest States for
SMALL'S DEHYDRATED ALFALFA MEAL

SMALL'S
DEHYDRATED ALFALFA
"For Feeds with a Future"
Archer-Daniels-Midland Co.
Alfalfa Division
P. O. Box 356 • Kansas City, Mo.

"the buy is BACIFERM®"

"who says so?"

# MARITIME DOES!

"We're sold on Baciferm," says Dr. L. N. Gilmore, Director of Research, Maritime Milling Co., Inc., Buffalo, N.Y. "Our own field trials corroborate the various college test data submitted to us—only 4 grams of Baciferm's zinc bacitracin per ton does an outstanding job in stimulating growth. We're now using Baciferm in our low-level broiler feeds. And it's going into our high-level 'Stress-Aid' feeds, too, because we find we get better results with furazolidone and tetracycline in combination with Baciferm than we had previously. One other thing – we are impressed with the stability of the zinc form of bacitracin which we understand is an exclusive, patented feature of Baciferm. It's good storage insurance for us and assures that *full* value is delivered to our customers."

CSC

ANIMAL NUTRITION DEPARTMENT

**COMMERCIAL SOLVENTS CORPORATION, 260 MADISON AVE., NEW YORK 16**

IN MEXICO: Comsolmex, S.A., Mexico 7, D.F. CANADIAN SALES REPRESENTATIVE: Norman Stark

***BACIFERM HELPS MARITIME MAKE THE SALE!***

Zinc Bacitracin Antibiotic Supplements

IOWA CONFERENCE, PART 2

# Dealers, Salesmen Told How To Put Knowledge to Work

By GEORGE L. GATES
Editor of Feedstuffs

AMES, IOWA—The Iowa College-Feed Industry Conference for feed salesmen and dealers picked up on Sept. 12 where the previous day's session for industry management and college personnel left off.

Whereas the session on Sept. 11 (Feedstuffs, Sept. 20, page 6) presented discussions of some broad principles involved in college-industry cooperation, the Sept. 12 conference was slanted toward "here and now" coordination of efforts to serve farmers with sound feeds and feeding advice.

The two conferences substituted this year for the former Iowa Nutrition Conference, with discussion centered on how nutrition knowledge can best be applied rather than on new discoveries. The program also included an intensive seminar on sales and leadership development conducted by a management consultant.

Dr. L. E. Johnson, head of the animal husbandry department, commented at the start: "In the past we have been talking to your bosses. Today we will talk about problems you meet in the field." The audience, totaling 550, was made up primarily of feed dealers and salesmen.

Here are summaries of the talks:

**BUILDING COLLEGE-INDUSTRY ACTIVITIES INTO AN IOWA LIVESTOCK PROGRAM—Dr. Marvin Anderson, associate director, Extension Service, Iowa State College:** The livestock industry in Iowa is significant nationally and to individual Iowa farmers. The state exports 12 times as much livestock products as it consumes, and 40% of the state's income is from livestock.

The growth and scientific development of the animal industry is due to contributions from both the college and industry. The college's broad responsibility is to search for new ideas and pass them on to feeders. This involves adequate testing of ideas and establishment of facts, formulation of recommendations and extension of information to people of the state. This latter activity differs from announcing a new discovery.

Industry's responsibility includes the use of the best available information and development of products suited to the needs of farmers. The feed industry has taken over much of the responsibility county extension staffs formerly had. The responsibility of extension specialists includes identification of problems, studying research data and development of programs.

Dr. C. W. Carlson Dr. L. D. Matterson

**TEXAS SPEAKERS—Dr. C. W. Carlson, South Dakota State College, Brookings, and Dr. L. D. Matterson, University of Connecticut, Storrs, are two of the 23 speakers lined up for the Texas Nutrition Conference to be held Oct. 8-10 at Texas A&M College. The program will cover feeding programs, newer developments in the feeding of poultry and livestock and an address on integration.**

The college should make specific findings known and report recommendations as the considered opinion of the staff or department. Also, opportunities should be provided for discussion of recommendations and problems, at the county as well as state level.

Some specific opportunities for coordinated programs by the college and industry exist in joint publication and visual aids, short courses and training meetings and exchange of information.

**COLLEGE RESPONSIBILITIES TO THE PRODUCER—W. G. Zmolek, Iowa extension animal husbandman:** The producer needs accurate, unbiased information as a basis for making decisions, and this is the basic responsibility of the college, particularly extension people.

In the research area, basic and applied research tend to overlap. One thing we must guard against is that we do not come out with brass bands and headlines every time we find some small basic finding that is yet untested and undeveloped as far as its application is concerned.

In the applied area, workers have a responsibility to thoroughly test new ideas under conditions similar to those in which the ideas will be applied.

The college also has responsibilities in training undergraduate students.

Another obligation is to provide industry with research information and suggest programs. A uniform program of the fundamentals, presented jointly by the college and industry, would strengthen everyone's efforts and reduce the confusion of the farmer.

**FEED INDUSTRY RESPONSIBILITIES TO THE PRODUCER—Dr. H. Ernest Bechtel, Larro Research Farm, General Mills, Inc., Indianola, Iowa:** Formula feeds are purchased for several reasons, which in themselves indicate the nature of the feed industry's responsibilities. Among reasons for formula feed purchases, combinations of the following are usually important:

1. Prospect of greater net farm income.
2. Lower purchase price per ton of feed.
3. Previous satisfaction with the product.
4. Ability to purchase feed on credit terms more to farmer's liking.
5. Gain access to special market aids or other advantages contained in feed manufacturer's package program.
6. Improve balance of the ration.
7. Increase growth or production of animals.
8. Reduce length of time to reach market weight and finish.
9. Better disease prevention or control.
10. Convenient source of otherwise hard-to-handle additives.
11. Pride and satisfaction from top performing herds and flocks.
12. Make farm-grown feeds go further.
13. Desire for a change to improve past results.
14. Interest created by advertising.
15. Recommendation by someone held in high esteem.
16. Good results obtained by neighbor on same feeding program.
17. Step up palatability of the ration by use of special feed textures and formulations.
18. Secure services of feed industry representatives as adviser on special farm problems.
19. Obtain more uniformity and better quality at market time.
20. Ability of manufacturer to service the account.
21. Confidence in the manufacturer and his representatives.

The extent to which the feed industry and its individual members can face up to this list and claim a more than satisfactory record of performance can be regarded as a measure of how well the industry has come of age and prepared itself for the years ahead.

Not the least important problem is that of selecting useful facts from the mounting lot of new discoveries. Skill and initiative must be used in putting selected know-how to work.

**"NUTRIMYCIN"—A NEW APPROACH TO THE TECHNICAL COMPLICATIONS EVERY FEED SALESMAN ENCOUNTERS—Frank Steinmetz, The Pillsbury Company, Clinton, Iowa** (one of the three talks on helping the farmer understand nutrition): Feed nutrition is becoming increasingly complex. "Nutrimy-

(Turn to IOWA, page 120)

# Daffin Acquires Anglo American Mill Corporation

LANCASTER, PA. — Daffin Manufacturing Co., Lancaster, has acquired the assets and exclusive manufacturing rights of the Anglo American Mill Corp., Owensboro, Ky., according to an announcement by Irl A. Daffin, president.

The Anglo American firm will become a division of the Daffin company, and will be managed from Lancaster by Cecil H. Dodd, president of Anglo American. The division will produce a line of feed and flour processing equipment, all of which will be built in Lancaster.

Anglo American's inventory and certain production machinery will be moved from Owensboro and installed in Daffin's Lancaster plants.

**Pelleting Equipment**

Anglo American was one of the first firms to develop a feed pelleting machine for compressing formulated ground feed into small cubes or nuggets.

"Currently there is a strong trend toward pelleting feed," Mr. Daffin commented, "and the Anglo American machine is one of its largest selling products."

Anglo American was started in 1908 when operators of the firm acquired manufacturing rights to an English-produced, self-contained flour mill. Since 1928, the Kentucky firm has expanded into a complete line of feed processing equipment while continuing to build the flour mill. Mr. Dodd has been associated with the company for the past 26 years.

Other products include heavy-duty hammermills, molasses blenders, hay cutters, and a high-precision chemical blender known to the chemical and feed industry as the MacLellan batch mixer.

Anglo American engages extensively in foreign trade.

The Daffin company makes mobile and stationary feed plants and pneumatic feed handling equipment. Its own line will be augmented by the production, sales and service of the Anglo American grain processing equipment, Mr. Daffin said.

# Nutrena Transfers John N. Boyce

MINNEAPOLIS — John N. Boyce, Cargill hybrid corn district sales manager here, will be assigned to Nutrena Mills' Sioux City, Iowa, staff Oct. 1 to assist in developing the company's quality controlled egg program.

Before joining Cargill Mr. Boyce was a poultry farm manager, turkey farm worker, and worked in feed sales, promotion and advertising.

# 78% of Mills Send Out Most Feed in Packages

NEW YORK—Approximately 78% of the feed mills covered in a recent feed packaging survey indicated that most of their feed is sent out in packages. The remainder said that most of their feed is delivered in bulk.

The survey, covering both manufacturers and dealers, was conducted by an independent agency. It was sponsored by The Burlap Council, and the results were released recently by the council.

In the manufacturer category, 400 mills in various parts of the U.S. were surveyed. They ranged in size from small local plants to large wholesale mills. More than half were in the capacity category of 10 or less tons per hour, with the remainder producing more than 10 tons per hour.

One of the questions asked of the mills was: "Is the greatest percentage of your feed delivered in paper, burlap or bulk?"

On a national basis, 41.5% said burlap; 36%, paper, and 22.5%, bulk. A regional tabulation showed that paper led among the mills surveyed in a six-state midwestern region, while burlap led in the other eight regions as grouped by the Census Bureau. Bulk was strongest on the West Coast, where 10 of the 26 mills surveyed said most of their feed is delivered in bulk.

Another question asked of the feed manufacturers was: "Do bulk deliveries seem to be increasing or remaining the same?" Approximately two thirds of the mills replied that bulk deliveries are increasing and one third feel that they are not increasing.

Asked whether they ship feed in returnable burlap bags, some 56% of the mills covered in the survey indicated that they do. Regionally, the percentages were highest in New England, the middle Atlantic area,

(Turn to PACKAGING, page 119)

# Far East Crisis Hikes Oilseed Meal Futures

MEMPHIS, TENN. — The Far East crisis gave the oilseed meal futures market a boost on the Memphis Board of Trade during the past week. This followed a period in which good weather was forecast over the soybean belt, which tended to lower prices.

Unrestricted soybean oil meal closed Sept. 24 60¢ to 85¢ ton higher than on Sept. 17, Eastern Trunk Line soybean oil meal 75¢ to 90¢ higher, bulk solvent cottonseed oil meal 50¢ to $1.25 higher, and sacked old process cottonseed oil meal unchanged.

The September contract expired Sept. 22 in orderly fashion.

Turnover for the period amounted to 9,800 tons of unrestricted soybean oil meal and 2,900 tons of bulk solvent cottonseed oil meal.

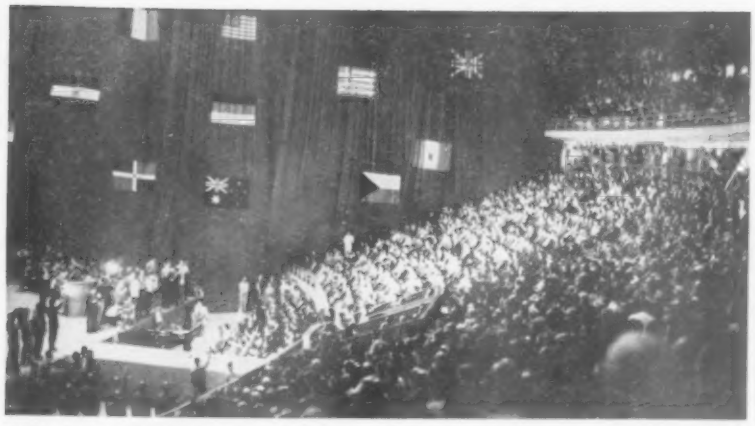
# *Firm's Area Expands —So Does Name*

MYERSTOWN, PA. — Whitmoyer Laboratories of Georgia, Inc., has officially changed its name to Whitmoyer Laboratories of Dixie, Inc., it was announced by company officials in Myerstown.

The change was necessary because of the rapidly expanding poultry industry in the South and the subsequent increase in the firm's sales area, a spokesman said.

The headquarters will remain in Gainesville, Ga., and Jack Richards continues as manager.

The firm also has established a warehouse at Albertville, Ala., and Gene Darnell will be the representative for that area.



**POULTRY CONGRESS—Thousands of delegates witnessed the presidential inauguration of the 11th World Poultry Congress in Mexico City Sept. 21. The week-long event drew participants from 47 different countries, including those behind the Iron Curtain.**

# *Poultry Experts From 47 Nations at World Congress*

**By Special Correspondent**

MEXICO CITY — Thousands of poultry experts from every corner of the globe assembled in Mexico City this week for the 11th World's Poultry Congress.

The congress, third to be held in the Western Hemisphere, was attended by 1,587 delegates from 47 countries, including Russia, but for every offical delegate there were about five "interested" ones—feed distributors, equipment manufacturers, chicken farmers, poultry merchandisers and stock breeders. From the U.S. alone, officials estimate that around 1,300 men and women traveled to Mexico for the meeting.

The congress was opened Sept. 21 by Mexico's President Adolfo Ruiz Cortines, and the opening session was also addressed by the Mexican Secretary of Agriculture, Gilberto Flores Munoz, and Dr. Rupert Coles of England, president of the World Association of Poultry Science.

**Mexico's Growing Industry**

The week-long congress, made up of work sessions and a gigantic public exhibit by participating countries in the big National Auditorium in Chapultepec Park, was hosted this year by a country that in the brief span of three years emerged from an unimportant and dependent poultry producer to a completely self-sustaining chicken-and-egg status.

As late as 1955 Mexico was producing a scant 8 million eggs a day for its 30 million population. It relied heavily on neighboring countries, particularly the U.S., for imports of not only eggs, but breeding stock and feeds as well.

Today the country produces 29 million eggs daily, boasts some of the world's most advanced chicken farms and meets all of its feed requirements through an imposing array of suppliers, some purely Mexican, and others foreign firms who have established Mexican branches, such as Ralston Purina and Archer-Daniels-Midland.

The technical sessions accompanying the congress were devoted to genetics and breeding, physiology and nutrition, diseases and their control, production programs, and economics and marketing. Papers were delivered by scientists from Australia, the U.S., England, Italy, Japan, Russia, Switzerland, South Africa, Canada, Germany, Brazil, Scotland, The Netherlands, Hawaii, Sweden, Mexico, Denmark, Israel, Uruguay, Spain, Egypt and Chile.

Hundreds of thousands of spectators crowded through the giant National Auditorium during the congress to see the country-by-country exhibits and the displays arranged by breeders and poultry equipment companies.

Though the Mexican poultry industry has reached a point of self-sufficiency and no longer depends on the U.S. for feed, stock and egg shipments, the largest single exhibit in the congress here came from the U.S.

"We're merely interested in showing the latest U.S. techniques," explained one official of the U.S. Department of Agriculture exhibit, "and although Mexico is already up to date with us in most respects, we thought this World Congress would be a chance to show other countries what American poultry practices are."

The big U.S. display on the mezzanine of the National Auditorium showed with photo murals, motion pictures, and "live" displays the breeding and marketing methods of poultry products in America. The famous "talking hen" that has appeared for years in similar USDA exhibits was on hand, with a speech dubbed in in Spanish for the occasion. Another highlight of the U.S. exhibit was a series of hatching cages where spectators could watch incubated eggs actually producing their chicks.

The USDA's delegation to the Congress was headed by Albert W. Brant

(Turn to CONGRESS, page 119)

## DeKalb Feed Firm Buys Indiana Plant

DeKALB, ILL. — The DeKalb Molasses Feed Co. has purchased property in Brookston, Ind., formerly owned by the Heekin Can Co. of Cincinnati, announced Hermon Cortelyou, president.

Mr. Cortelyou said the 40,000 sq. ft. building will be converted into a modern feed mill to supplement the tonnage of the firm's two plants at DeKalb and Rock Falls, Ill.

The Indiana plant will handle bu'k inbound ingredients and bulk outbound pelleted supplements and complete feeds.

Production is scheduled to start in the new plant in December, Mr. Cortelyou said.

## Poultrymen Vote on Promotion Council

SAN FRANCISCO — California poultrymen who have not yet received ballots regarding the establishment of a state Poultry Promotion Council may obtain them upon request from the California State Department of Agriculture, Sacramento, according to a department announcement.

The final date for sending in the ballots is Oct. 15. Ballots have been sent out to all poultry and egg producers in the state, including hatcheries and feeders. The voting does not apply to producers of turkeys, geese or ducks.

# Around the World's Poultry Congress

**By Sam Golden**

*EDITOR'S NOTE: The 11th World's Poultry Congress, attracting scientists and others from all over the world, was being held this week in Mexico City. Many of those in attendance were feed and poultry industry men from the U.S. The scientific discussions and other aspects of the event will be covered elsewhere in this issue and later in Feedstuffs. In the meantime, a "roving reporter," Sam Golden of the Amburgo Co., Inc., Philadelphia, has recorded some of his observations on sidelights of the congress. Following is the first dispatch from Mr. Golden, written as the congress was about to get under way.*

MEXICO CITY—I arrived Sept. 16 at 5 p.m. via Eastern Airlines, nonstop flight 301 from Idlewild, N.Y. Flying time was less than six hours with service fit for kings and queens.

My taxi from the Mexico City Airport had a tough time trying to negotiate the traffic jams, or as they say in Spanish, "mucho trafico!" This was because Mexico was celebrating its own July 4th, or National Independence Day.

My driver told me that more than 500,000 Mexicans witnessed the annual Independence Day parade, which took place the same morning of my arrival. The fiesta spirit was quite in evidence.

After checking in at the Del Prado Hotel, one of the four hotels designated as congress headquarters (the others were the Hotel Reforma, Alffer and the Hilton Continental), I was host to Mr. Guillermo Jimenez and his wife Maritza, who brought

(Turn to AROUND, page 119)

Tastelation® FLAVORS ENGINEERED for ALL YOUR FEEDS
Lowers Feed Costs • Increases Acceptability • Holds Palatability
TASTE ENGINEERING, INC.
1401 West Hubbard Street Chicago 22, Illinois
MOnroe 6-5255
Manufacturers • Importers • Distributors

FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S
For Money-Saving Dairy Feeds You Need
MIXERS' COARSE GROUND WHITE OATS
Fruen's Minneapolis, Minn.
MIXERS' COARSE GROUND WHITE OATS . . . now truly "coarse ground" for best results in dairy feeds. Its uniform quality and unquestioned nutritional value give the dairyman the real feeding results he needs for sustained production at a price he can afford to pay. And, in order to thrive, the dairy cow's complicated digestive system needs the feeding values found only in a product like MIXERS' COARSE GROUND WHITE OATS.
Ask for samples and delivered prices.
Mixed cars shipped at straight car prices
Our Teletype Number is MP 477
TOWER BRAND ROLLED OATS (Steam processed)
ACE BRAND ROLLED OATS (Steam processed)
KING BRAND ROLLED OATS (Steam processed)
WHOLE OAT GROATS
STEEL CUT OAT GROATS
BOLTED OAT FLOUR
GLENWOOD FEEDING OAT MEAL
FALCON BRAND PULVERIZED WHITE OATS
STANDARD BRAND PULVERIZED WHITE OATS
DAIRY BRAND COARSE GROUND OATS
CRESCENT BRAND PULVERIZED OATS
CORN OATS PELLETS (Corn-Oats)
MIXERS' PULVERIZED OATS
MIXERS' COARSE GROUND WHITE OATS
MIXERS' PELLETED OATS
APEX BRAND CRIMPED WHITE OATS
OAT FEED
STEAM ROLLED WHOLE BARLEY
GROUND BARLEY
PEARLED BARLEY FLAKES (Max. 2½% fiber) (steam processed)
GLENWOOD PEARLED BARLEY
STAR CRACKED PEARLED BARLEY
STEEL CUT WHEAT
ACME GROUND DOMESTIC FLAX SCREENINGS
Millers TO THE FEED TRADE
FRUEN MILLING COMPANY
MINNEAPOLIS 5, MINNESOTA
FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S • FRUEN'S

an address on integration.

ice the account.

sales, promotion and advertising.



# Sharp Production Hike in Pigs Seen Outside Corn Belt

GRUNDY CENTER, IOWA — A strong trend toward sizeable increases in pig production during the winter quarter in 10 states outside the Corn Belt was indicated in a recent survey of farmers' intentions made by the National Hog Farmer, a publication for swine producers.

In a survey which covered Texas, North and South Carolina, Tennessee, Georgia, Michigan, Alabama, Mississippi, Oklahoma and Kentucky, the publication found that these 10 states —which last year farrowed nearly one fourth of the total sows farrowed in the nation during the three-month period—show an increase of 27% in sows to farrow during the December-February period. The survey also shows an increase of about 15% more farms raising hogs during 1959 than in 1958 in those states.

The survey was made by the publication to supplement the quarterly pig report of the U.S. Department of Agriculture which includes only nine Corn Belt states. The USDA has forecast a 20% increase in sows to farrow during the winter quarter—December through February — in the nine Corn Belt states.

# Cyanamid to Pay New FDA Fees For Its Customers

NEW YORK—The American Cyanamid Co. this week announced that it has made arrangements with the Food and Drug Administration for the company to pay fees, nominally chargeable to its feed manufacturer customers, under a new FDA regulation applying to feeds containing certifiable antibiotics in combination with new drugs.

Cyanamid officials said that under the regulation, which went into effect on Sept. 1, feed manufacturers must pay $5 for each medicated feed formula containing a certified antibiotic and a like amount for any changes affecting the new drug substances. The regulation, they added, does not apply to feeds containing non-certifiable antibiotics in combination with new drugs.

Frank O. Noel, animal industry products manager, said payment of these fees for Cyanamid customers is "strictly a service."

"American Cyanamid could avoid the fees by decertifying its antibiotic, Aureomycin chlortetracycline," he said. "But to do so would not be fair to our customers. Certification, which can only be obtained by an act of Congress, is proof that rigid requirements have been met for every approved claim for Aureomycin. For that reason it is our intention to maintain the certification status of Aureomycin. And like any other service offered by the company, this one will also be available without charge.

"The method of registering medicated feeds on Antibiotic Form 10 set up by Cyanamid and approved by FDA eliminates all red tape. The feed manufacturer merely fills in his name on four copies of a letter authorizing FDA to bill American Cyanamid Co. for charges on applications or amendments on feed formulas containing one or more of the company's products—Arzene, Aurofac and Enheptin A.

"The feed manufacturer then attaches three copies of the letter to Antibiotic Form 10 (application for exemption for antibiotics mixed in animal feeds) or Form 10 amendments. He is required to attach Cyanamid's authorization letter only once, since it remains in effect continuously on any subsequent formulas or formula changes submitted thereafter."

## SUPPLY

(Continued from page 1)

quantities of high moisture corn had to be disposed of.

An increase of 5% in grain consuming units, however, despite the lower feeding rate, can be expected to bring consumption for feed to about 142 million tons, compared with 137 million for last year. If a total of nearly 22 million tons more are used for food, industry and export, as estimated by the USDA, the total disappearance for all purposes would be about 164 million tons.

Based on this level of utilization, carryover stocks would continue upward and would reach a new record of about 75 million tons at the close of the season.

**Feed Grain Supplies**

A look at each of the feed grain supplies shows the following:

**Corn:** Estimated in September at 3,589 million bushels. With a record carryover of around 1,525 million bushels in prospect for Oct. 1 the total supply for 1958-59 would exceed 5 billion bushels for the first time. This would be nearly 300 million bushels above the 1957-58 supply. The supply this year is more than a billion bushels over that of four years ago.

**Sorghum:** The 1958 sorghum grain crop is now estimated at 579 million bushels, slightly above the record of 562 million set in 1957 and three times the 10-year average. The prospective Oct. 1, 1958, carryover of around 300 million bushels is almost four times as large as any previous carryover and the total 1958-59 supply of 879 million bushels is more than a third larger than the previous record supply of 641 million bushels last year.

**Oats:** The 1958-59 oats supply is estimated at 1,770 million bushels, 12% larger than last year and only 39 million below the record set in 1955.

**Barley:** Estimated at 660 million bushels, 13% above last year and nearly 50% above the 1952-56 average. The record production in 1958 was 7% greater than in 1957, and 43% above 1952-56.

**Oilseed Meal**

Production of oilseed meal is expected to be a little heavier in 1958-59 than the 10.9 million tons estimated for 1957-58. Larger output of soybean, cottonseed and peanut meals is in prospect. Much of the increase in 1958 soybean production is expected to go into larger carryover stocks at the close of the year, although a moderate increase in exports also is in prospect, the report said.

Supplies of tankage and meat meal available for feeding during 1958-59 are also expected to be increased because of the prospect for increased slaughter of livestock.

Ample hay in nearly all areas is also predicted for the 1958-59 feeding year. The total supply for the year is estimated at 145 million tons, 6 million more than the record of last year. Although the 1958 crop of 118 million tons was about 3 million under the 1957 record, the drop in production was more than offset by a 9 million ton increase in the carryover. The big supply will provide a little over 1.5 tons per animal unit, 18% over the 1952-56 average.

Regarding the outlook for prices for feed, the USDA report stated merely that "declines in the over-all level of feed prices are expected this fall when the 1958 crops of corn and sorghum grain come to market in volume and the processing of the record 1958 soybean crop gets under way."

**TABLE 1. Feed Concentrate Balance, Numbers of Animal Units, and Feed Per Unit, U.S., Year Beginning October, Annual 1957-58**

(In million tons)

| Item | 1957* | 1958† |
|---|---|---|
| **Supply:** | | |
| Stocks beginning of year‡ | 48.9 | 60.5 |
| Production of feed grains: | | |
| Corn | 95.3 | 100.5 |
| Oats | 20.9 | 22.7 |
| Barley | 10.5 | 11.2 |
| Sorghum grain | 15.7 | 16.2 |
| Total production | 142.4 | 150.6 |
| Imports of feed grains | 1.0 | 1.0 |
| Wheat and rye fed | 1.4 | 1.5 |
| By-product feeds fed | 25.4 | 25.7 |
| Total supply | 219.1 | 239.3 |
| **Utilization, Oct.-Sept.:** | | |
| Concentrates fed:¶ | | |
| Corn | 79.6 | |
| Oats | 17.4 | |
| Barley and sorghum grain | 13.2 | |
| Wheat and rye | 1.4 | |
| Oilseed cake and meal | 10.6 | |
| Animal protein feeds | 2.9 | |
| Other by-product feeds | 11.9 | |
| Total concentrates fed | 137.0 | 142.0 |
| Feed grains for seed, human food and industry | 12.5 | 12.5 |
| Exports | 8.5 | 9.0 |
| Total utilization | 158.0 | 163.5 |
| Utilization adjusted to crop year basis | 158.6 | 164.3 |
| Stocks at end of crop year‡ | 60.5 | 75.0 |
| **Supply and utilization per animal unit:** | | |
| Total supply (Mil. tons) | 219.1 | 239.3 |
| Concentrates fed (Mil. tons) | 137.0 | 142.0 |
| Grain-consuming animal units (Mil.) | 161.5 | 169 |
| Supply per animal unit (ton) | 1.36 | 1.42 |
| Concentrates fed per animal unit (ton) | .85 | .84 |

*Preliminary.
†Preliminary estimates based on indications in September, 1958.
‡Stocks of corn and sorghum grains in all positions on Oct. 1, and oats and barley on July 1.
¶Total quantities fed in the U.S., including domestically produced and imported grains and by-product feeds.

# Farm Bureau Milling To Display Bulk Setup

HAMMOND, IND.—New bulk feed handling facilities will be the main attraction at the open house scheduled by the Farm Bureau Milling Co., Hammond, Sept. 30-Oct. 2. The equipment, installed at a cost of more than $100,000, will enable the firm to receive bulk feed ingredients by truck, and to truck the manufactured feed out in bulk, says Russell Paarlberg, manager.

A display of bulk feed trucks, bulk feed holding bins for farm storage, elevating and conveying equipment, and other types of associated items also is planned in connection with the open house.

The first two days of the open house will be reserved for representatives of county Farm Bureau cooperative retail feed outlets. The last day will be open to suppliers of feed ingredients and feed industry acquaintances and associates.

"It is anticipated that several hundred feed industry people will attend this open house to learn the latest and most efficient methods of distributing feeds," said Mr. Paarlberg.

Farm Bureau Milling is an Indiana corporation jointly owned by three state cooperative organizations, Indiana Farm Bureau Cooperative, Indianapolis; Farm Bureau Services, Lansing, Mich., and Wisconsin Farmco Service Cooperative, Madison. Farm Bureau Milling is the feed production unit for the poultry and livestock feeds distributed by the above named stockholders in their respective states.

Approximately 90% of the feeds produced are concentrates. Most of these concentrates are blended with home-grown grains either at the county cooperative retail point or at the farm. It is estimated that during 1958 Farm Bureau Milling will manufacture and ship approximately 170,000 tons of feed and concentrates to the 362 retail distribution points in Indiana, Michigan and Wisconsin, according to Mr. Paarlberg.

# Boat Ride Planned

CHICAGO — The Chicago Chapter of the Grain Elevator & Processing Superintendents is planning a boat ride for Oct. 25. The plans will be canceled, however, if too few members show an interest in the outing.

Enough checks (cost is $14 per couple, $7 each) from members must be sent in by Sept. 29 to meet a $350 guarantee.

The trip, starting at 8:30 a.m., involves a ride through the Cal-Sag Canal.

G. S. Kennedy

# G. S. Kennedy Named Executive V. P. of General Mills, Inc.

SAN FRANCISCO—Gerald S. Kennedy of Minneapolis, a veteran of 44 years with General Mills, Inc., was elected Sept. 22 to the newly created position of executive vice president. The announcement was made by Charles H. Bell, president of GMI, following action by the company's board of directors which met here Sept. 22.

Another important organizational change resulting from this action of the GMI board was the announcement by Mr. Bell of the appointment of E. O. Boyer of San Francisco as vice president and administrator of the flour, feed and oilseeds operations. These duties were relinquished by Mr. Kennedy in accepting his new assignment.

Both Mr. Kennedy and Mr. Boyer have previously been vice presidents and directors.

Mr. Bell further announced that B. W. Roberts of San Francisco has been elected vice president and succeeds Mr. Boyer in the position as general manager of the Sperry Operations in the western states.

Mr. Kennedy entered the employ of Washburn Crosby Co. June 15, 1914. Beginning as office boy, he worked in the wheat department at Minneapolis until 1920, when he was transferred to the Buffalo office where he served for 19 years in grain and operations. He was a member of the Buffalo Corn Exchange and the Buffalo Club and managed the Frontier Elevator for GMI. In 1939, Mr. Kennedy returned to Minneapolis as director of operations control. He became director of flour and feed operations in 1942, and vice president in 1943.

Mr. Boyer was employed as a bill clerk and order clerk from 1911 to 1912 for the Sperry Flour Co., Oakland. After Army service in France during World War I, he returned to Sperry, and through the years held the titles of salesman, assistant to branch manager and branch sales manager—in Oakland. In 1925, he became assistant general sales manager in San Francisco. He then advanced to general sales manager, vice president of the Sperry Division, and vice president of GMI, San Francisco.

Mr. Roberts, who has served as assistant general manager of the Sperry Operations of GMI since March, 1958, joined the company as an order clerk at Los Angeles in 1937.

**FEED STORE MOVES**

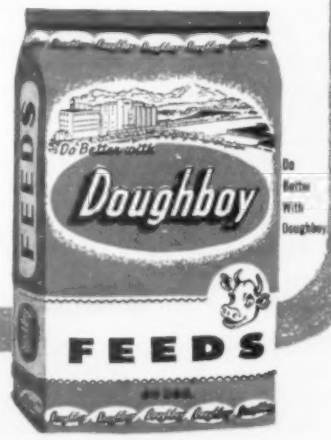
SHELBY, N.C.—Lee's Feed Store, Shelby, has moved to a new location. Tom Lee, operator, said that a recent change to a high percentage of bulk feed business made larger quarters necessary.

"the buy is BACIFERM®"

"who says so?"

# DOUGHBOY DOES!

READ WHAT DOUGHBOY SAYS: "We're convinced from all the evidence we've seen that Baciferm in our egg laying rations offers everything in the way of performance that any other antibiotics do. We know this to be so, also, from the many reports we've gotten from satisfied customers. In fact, our servicemen report 50% fewer calls about laying-flock troubles. We buy Baciferm, too, because it represents substantial savings to us. In addition to that, the zinc bacitracin in Baciferm offers the stability we insist on for our feed ingredients. We think Baciferm is an outstanding buy, is a product of proved effectiveness that helps us put out the best feeds possible."




CSC

ANIMAL NUTRITION DEPARTMENT

**COMMERCIAL SOLVENTS CORPORATION, 260 MADISON AVE., NEW YORK 16**

IN MEXICO: Comsolmex, S. A., Mexico 7, D.F. CANADIAN SALES REPRESENTATIVE: Norman Stark

**BACIFERM HELPS MAKE THE SALE!**

Zinc Bacitracin Antibiotic Supplements

# Finding Time to Manage

**An agricultural economist tells why elevator and feed mill managers must drop their "jack-of-all-trades" role and start using the most of their time in managing an efficient business**

**By Dr. W. S. Farris**
**Purdue University**

*EDITOR'S NOTE: The accompanying article is from a speech given by Dr. Farris at the Grain and Feed Dealers National Assn. Convention in St. Louis Sept. 8. Dr. Farris is an assistant professor of agricultural economics at Purdue and has done considerable research on elevator and mill management.*

The job of a manager of a local elevator or feed mill is an interesting and complex one. The manager in many instances is owner of the business and hence must view it from an owner's standpoint. As manager of the business he must endeavor to combine his productive resources in such a way as to gain the most efficient operation of the business. Many elevator and feed mill managers also contribute a substantial amount of labor to the operation of the business and therefore are interested in achieving the most economical output per unit of labor, considering their desires as workers. In addition to these facets the manager must be all things to all people. He must supervise the personnel relations in the business, the whims and fancies of the customers, he must do a reasonable job of public relations, he must be a sharp buyer and a good salesman as well as a keen observer of the business scene.

To some it may seem that the manager must be a jack of all trades. This may have been true a half century or so ago when managers were actually called upon to perform any and all the duties necessary in the business. Considering the way that most elevator and feed mill businesses have grown in recent years, it is virtually impossible for a man to be a jack of all trades and at the same time an efficient manager. The past few decades have seen marked improvement in production efficiency. More attention is now being given, and rightly so, to improve management efficiency. This is imperative if management makes its proper contribution to the desired development of a business.

Basically, the manager's job is to evaluate current problems, decide what to do and then launch a plan of action. How then can the local elevator or feed mill manager best use his time in order to operate the business efficiently, to increase profits in the business, and gain optimum return on the capital invested in the business?

### Ground Rules

Here are some ground rules that will help the manager apply business principles in his decision making and make his own time go farther.

1. Use your board of directors.
2. Hire the best part-time professional help.
3. Get out of the office and find out what competitors are doing.
4. Find a shoulder to cry on—not your wife's—but someone who can ask penetrating, embarrassing questions about your business.
5. Bring someone along in your organization who can act as your assistant.

This of course means delegating responsibility. Delegation of responsibility isn't easy. Handing over a job that we can do very well ourselves to someone who is in the process of learning goes against the grain for the most of us. Yet this is the inevitable, if a manager is to marshal his resources of capital and people so that he gets the maximum contribution from each unit of the business. Here are some basic elements which the manager must cultivate in order to develop the art of delegating responsibility:

1. The manager must be receptive to another person's ideas.
2. He must be sufficiently placid to see others make mistakes and to charge the cost to the development of his most valuable resource—people.
3. He must be willing to forego the luxury of "blowing his top."
4. He must exercise great powers of self restraint even when he knows

(Continued on page 14)

Carl F. Rosvally

**NEW PRESIDENT—Carl F. Rosvally has been elected president and a director of Kinter & Grove, Inc., Dillsburg, Pa., feed firm, according to an announcement by Lloyd L. Kinter, chairman of the board. Mr. Kinter said the selection of Mr. Rosvally to head the firm is part of a general plan of expansion.**

**CRITICally speaking**

"You can be a Happy feed dealer, too!" says

**DON HARDEN**
GALESBURG, ILL., Feedman

"If you take your place in the line-up of Critic dealers."

**WHY ARE THEY HAPPY?**
Because their business is growing with The Critic system of Bulk Service

**WHY IS THE CRITIC BULK SYSTEM BETTER?**

- ★ Critic pioneered bulk handling in the Midwest so has more experience than any other feed firm . . . 12 years.
- ★ Less "fines" because of an exclusive hard pellet and better handling technique
- ★ Mill to the farm delivery service
- ★ Actual laboratory controlled quality
- ★ The largest bulk discount in the industry
- ★ Proven bulk equipment financing plan

Take Your Place in the Line-up of Happy Critic Dealers

There May Be a Franchise Available in Your Area

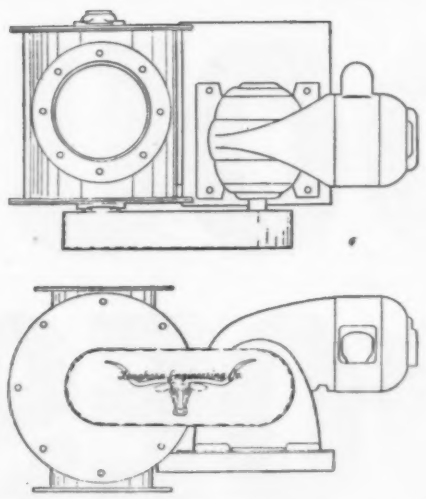
Call The Beardstown Mills Co., Beardstown, Ill.
Phone 130 . . . ask for Bob Fischer

for the Greatest Grow on earth

CRITIC QUALITY FEEDS

ALL CRITIC FEEDS ARE QUALITY CONTROLLED

**For Maximum Efficiency · The ROTARY AIR LOCK & VANE FEEDER By Longhorn Engineering IN YOUR DUST COLLECTION SYSTEM!**

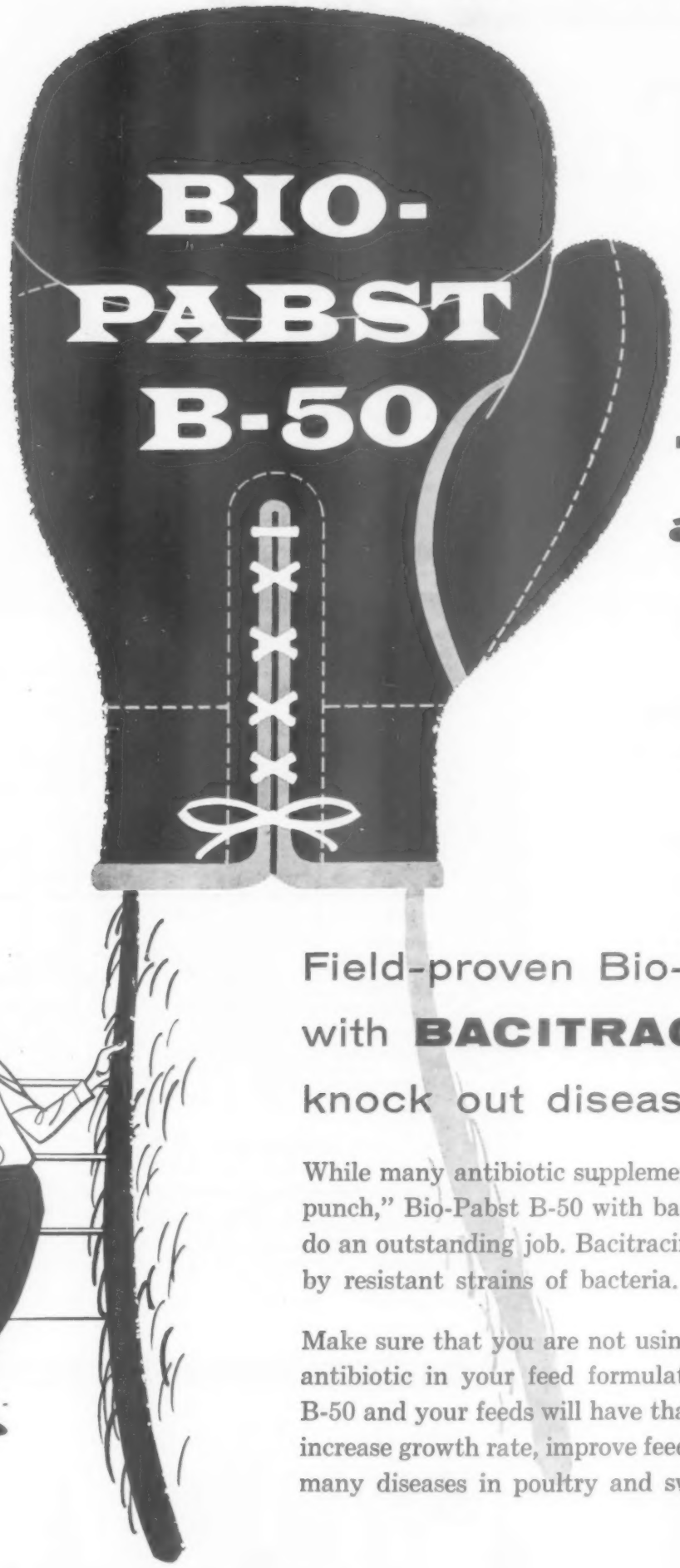


This all-steel body and rotor give absolute tolerance control. Models available for all types of applications — including Model RAL-S for sealed vane applications and Model PAL for pneumatic or "blow-through" requirements. All types of drives available — from variable speed to explosion-proof. Tell us your dust handling problem — we'll provide detail on how this proved equipment can help you solve it.

Longhorn Engineering Co.

Phone -- MArket 6-8283

P.O. Box 4176 FORT WORTH, TEXAS




**...winner and still champion!**

## Field-proven Bio-Pabst B-50 with **BACITRACIN** continues to knock out disease bacteria

While many antibiotic supplements have been "losing their punch," Bio-Pabst B-50 with bacitracin continues to do an outstanding job. Bacitracin has never been defeated by resistant strains of bacteria.

Make sure that you are not using an obsolete,"defeated" antibiotic in your feed formulation. Change to Bio-Pabst B-50 and your feeds will have that solid punch needed to increase growth rate, improve feed efficiency and help control many diseases in poultry and swine.

**PABST BREWING COMPANY**

ANIMAL FEED DIVISION • MILWAUKEE 1, WISCONSIN • TWX-MI 586 • PHONE BRoadway 1-0230

**Prompt shipment of all Pabst Feed Supplements from our distributors' warehouses at:**

CARROLL SWANSON SALES CO., P. O. Box 1034 University Place Station
Des Moines 11, Iowa • CRestwood 9-8881
SELEY & COMPANY, 900 Wilshire Boulevard, Los Angeles 17, California • MAdison 8-1371
G. and M. SALES COMPANY, INC., P. O. Box 409, Statesville, N. C. • TRiangle 3-3669
P. G. CALLISON CO., 935 N. W. 12th Avenue, Portland 9, Oregon • Capitol 2-7271
FEED SERVICE CO., Ruby Street, Mankato, Minnesota • 81636
HOLT PRODUCTS CO., Box 840, Milwaukee, Wisconsin • FRanklin 2-7210
MIDLAND-WESTERN, INC., 160 W. Spruce St., Reading, Pa. • FRanklin 6-3839

Pabst Blue Ribbon®

**FOR GREATER EGG PRODUCTION**

# Testwork with and breeder rations

**the buy is Baciferm®!** Baciferm—the zinc bacitracin antibiotic supplement—has demonstrated its effectiveness in terms of higher egg production, lower mortality, increased feed efficiency and greater profits. The test work summarized below clearly shows why it's good business to incorporate Baciferm in the feeds you furnish your customers.

**1 MISSISSIPPI STATE COLLEGE EGG-LAYING TEST** was conducted for six months, from March to September 1957, with caged White Leghorns.

| Treatment | Antibiotic Per Ton of Feed (grams) | Egg Production (hen day basis) | Pounds Feed Per Dozen Eggs |
|---|---|---|---|
| Control | 0 | 49.1% | 5.6 |
| Combination* | 200 (I) | 57.8% | 5.0 |
| BACIFERM (zinc bacitracin) | 200 (I) | 55.3% | 5.1 |
| Terramycin® (oxytetracycline) | 200 (I) | 52.0% | 5.3 |
| BACIFERM (zinc bacitracin) | 35 | 53.9% | 5.7 |
| Terramycin® (oxytetracycline) | 35 | 52.8% | 5.4 |

(I) = Intermittent feeding (4 days per month); other treatment fed continuously.

*Combination of 100 grams zinc bacitracin and 100 grams oxytetracycline.

The data shows that Baciferm produced excellent results in improving egg production and egg/feed ratio. While both antibiotics tested gave similar results, note that hens fed Baciferm did slightly better. Best results were obtained by intermittent feeding of the antibiotic combination containing Baciferm.

**2 V.P.I. EXPERIMENT STATION LAYING HEN TEST** investigated the use of Baciferm antibiotic supplementation at low and high levels on rate of lay, feed conversion and fertility. 44 pullets were on test during the 46-week period November 1, 1956 through September 21, 1957.

| Treatment | Antibiotic Per Ton of Feed (grams) | Egg Production | Lbs. Feed per Doz. Eggs | % Fertility | % Hatchability of Fertile Eggs Set | Mortality No. |
|---|---|---|---|---|---|---|
| Control | 0 | 60.5% | 4.68 | 91.7 | 89.1 | 4 |
| BACIFERM (zinc bacitracin) | 10 | 73.3% | 4.37 | 95.4 | 90.4 | 5 |
| BACIFERM-PB* (zinc bacitracin) | 10 | 73.1% | 4.46 | 98.2 | 90.3 | 6 |
| BACIFERM (zinc bacitracin) | 100 | 72.0% | 4.28 | 97.3 | 92.3 | 2 |
| BACIFERM-PB* (zinc bacitracin) | 100 | 70.7% | 4.55 | 98.5 | 92.4 | 1 |

*Contains zinc bacitracin plus penicillin (3:1 ratio)

Egg production was increased between ten to twelve percent by feeding zinc bacitracin. The egg-feed ratio was improved as much as 8.5% and one of the best ratios was obtained with 10 grams zinc bacitracin per ton. Fertility was increased as much as 6.8%. Even with this betterment of fertility, zinc bacitracin then increased the percent of fertile eggs hatched. Note also the lower mortality at 100 gram per ton level.

**the buy is**

# antibiotics in layer gives you the proof

**3** **THE JOHNSON LOW-LEVEL HEN TEST** conducted near Terre Haute, Indiana, for 27 weeks, January 6 to July 7, 1957, investigated the use of Baciferm during slumps in egg production. There were 53 White Leghorns in each test group.

| Treatment | Antibiotic Per Ton of Feed (grams) | Drop in Egg Production % | Extra Eggs Due To Zinc Bacitracin Eggs/1000 birds/day | Extra Profits Per Day/1000 Birds | % Mortality |
|---|---|---|---|---|---|
| Control | 0 | 10.3 | — | — | 17.0 |
| BACIFERM (zinc bacitracin) | 10 | 6.3 | 63 | $1.80 | 8.5 |
| BACIFERM-PB* (zinc bacitracin) | 10 | 6.5 | 65 | $1.74 | 6.4 |
| BACIFERM-PB* (zinc bacitracin) | 25 | 3.1 | 70 | $1.73 | 8.7 |

*Contains zinc bacitracin plus penicillin (3:1 ratio)

In this test, the inclusion of Baciferm in the ration resulted in a minimized drop in egg production compared to the control. Baciferm increased profits, raised egg production, reduced mortality and improved the feed efficiency.

**4** **MICHIGAN FIELD TRIAL** was conducted at a large egg farm in Central Michigan on 3551 White Leghorns. A commercial all-mash, layer-breeder feed was fed throughout the test period of 6 months to about half the birds. The other half was fed the feed with zinc bacitracin incorporated at a level of 50 grams per ton. The economics are summarized below.

| | No Antibiotic | BACIFERM Zinc Bacitracin (50 grams/per ton of feed) |
|---|---|---|
| Return from hatching eggs* 60¢/dozen | $8540.40 | $8689.80 |
| Total feed costs* | 4216.50 | 4198.95 |
| Return over feed costs | 4323.90 | 4490.85 |
| Gain from feeding zinc bacitracin | — | 166.95 |

*Feed $90.00/ton; zinc bacitracin cost $3.00/ton of feed.

Results: the feed containing zinc bacitracin gave a greater net return than the basal feed alone. This field trial shows that if production is low from the type of stresses involved in this test, it is economically worthwhile to add an antibiotic. An extra penny invested per dozen eggs could make the difference between profit and loss.

**BACIFERM IS GOOD BUSINESS FOR YOU!** And good insurance for your customers. Baciferm – at high levels or at low levels – does the job in laying rations. Outstanding for broilers, turkeys and swine, too. Only Baciferm contains the antibiotic zinc bacitracin made exclusively by CSC under Patent No. 2,809,892 issued October 15, 1957. Baciferm also supplies B-vitamins, high protein, vitamin K and unidentified growth factors, as well. And – Baciferm costs from $3 to $6 per ton *less* than the tetracyclines. More and more feed manufacturers are discovering –

# BACIFERM®

(Zinc Bacitracin Antibiotic Supplements)

Animal Nutrition Department **COMMERCIAL SOLVENTS CORPORATION** 260 Madison Avenue, New York 16, New York

IN MEXICO: Comsolmex, S.A., Mexico 7, D.F. • CANADIAN SALES REPRESENTATIVE: Norman Stark

CSC

much about the details of the business.

In cultivating the above elements that assist in the art of delegating responsibility the manager must take these five specific courses of action to provide the kind of environment in which resources can be used effectively:

1. He must state policies clearly and explicitly.

2. He must define jobs adequately so that workers will know exactly what is expected of them.

3. He must set goals for the business—this provides self discipline that shows employees how well they are doing and gives the boss an automatic control.

4. His ideas must be effectively communicated both to his employees and his customers.

5. He must establish controls—the manager can not rid himself of the responsibility for getting a task done. He must have some means of knowing what is done, when to step in and take action.

The manager's main job is to make decisions. Some would say that this takes no time, but I admit that it does take time; lots of it if a manager is to make more right decisions than wrong ones. This outline of what is involved in decision making illustrates that managerial activities do take time:

1. The manager must get clear focus on his objective.

2. He must identify and define the problem.

3. He should bring all pertinent information to bear on the problem.

4. He then can select possible solutions to the problem.

5. He must evaluate the several alternative solutions.

6. Then he can select a course of action that is the best possible one under the circumstances.

7. He should test this course of action by investigating whether the resources used in the action could be better used someplace else in the business and yield a greater return.

All of the foregoing illustrates that effective management takes time and suggests that there are guide posts that will enable the manager to use his time more efficiently. Just how can we get at this problem of improving the use of management time?

### Studied Mills

One approach to this problem of improving manager's time is to find out what managers actually do; how they actually spend their time? We studied several Indiana elevator-feed mill combinations to identify the items that claimed the manager's time between the time the business opened in the morning and until it closed at night. We found that managers generally knew what they would be doing during the day's routine, but that even the best of them were at a loss to supply the details. Time studies of managers' activities revealed the variety of incidents and duties that claimed the manager's time and attention during his working day. During a typical one hour period it was found that one manager performed 27 different items of work. The manager contacted several customers, weighed four loads of feed, made out several tickets, ran three tests on grain, gave directions to help in the feed mill, answered the phone several times, described location of customer residences to feed truck drivers and made a couple of attempts at some study and planning during this hour. Business was admittedly a little slow this day; however, it was obvious to see that with all these different items of work claiming the time of the manager, he had little time for management in the sense of planning and organizing the business. On days when business was booming under this arrangement there was practically no time available for managing.

In another instance we observed that the manager took advantage of the "coffee break" period to do some good customer relations work. During this brief period when several customers were in the office, he was able to survey the conditions in the community, discuss a few recommended practices, and one specific feeding problem with this group of customers. It appeared to be appreciated by the customers and it helped the manager to get a feel of his customers' pulse. When a manager is burdened with tasks that could, with adequate planning, be delegated to others he can find more time for this kind of customer relation work.

In preparing a check list of duties for elevator and feed mill managers, we were helped with advice from several managers, and came up with what we thought was an all-inclusive list of their activities. In our actual time studies, however, we found out that we were forced to include 20 to 30% of the manager's time in a category labeled, "other work." This meant that even with the advice of several managers on formulating the list of jobs which they did we found approximately a fourth of their time which was claimed by unanticipated duties. Many of these duties, among which was listed burning trash and filling the soft drink machine, could easily have been done by other employees and thus saved some of the day's time for real managing.

We found that elevator and feed mill managers spent about 85% of their time in four types of work—office work (mostly clerical) 40%, handling customers 20%, giving instructions 16%, and handling tickets, orders, or statements, 9%. With schedules as tight as this managers have little time to manage. Cultivating the art of delegating responsibility, studying your day's activities to see what you do and what can be eliminated, and concentrating on the most important problems rather than routine items, will gain needed management time. Time is of the essence to managers. It is their most valuable resource. The use of some of these guides will help you make it more valuable. Simply by taking time to think and figure, you may be able to increase your volume of business, cut your costs, improve your buying and selling practices, and help you achieve your most coveted objective—increased profits.

### EXPANDS RIVER TERMINAL

HENDERSON, KY. — Henderson Elevator Co.'s river terminal is expanding present facilities by about $100,000 with the addition of 10 new storage bins, S. S. Wathen, president, has announced. Mr. Wathen said completion of the new bins will permit the firm to store about 900,000 bu. of grain.


CHAMPION

MOBILE MILL EQUIPMENT

**Process More Tonnage at Lower Cost...**

Owners of CHAMPIONS are in a strong competitive position with larger capacity, labor-saving features, and easy, one-man operation. With their fast and accurate grinding action, and large, 2- to 3-ton mixing capacity, CHAMPIONS process a high tonnage of quality feeds at a lower cost per ton, than units of smaller volume. More than two tons of bagged concentrates can be hauled on the large platform next to the mixer, thus saving extra truck and man-hour expense. And with CHAMPION'S new sheller arrangement, ear corn and grain are conveniently fed by the same feeder which feeds the hammermill unit — saving the expense of an auxiliary feeder. A simple control valve in the feeder-head diverts the ear corn into the sheller or into the mill unit as desired. Larger capacity — labor-saving features—low upkeep—make CHAMPION the biggest mobile value in the feed industry today. What's more, you'll save on your original investment, too, because CHAMPION'S 29 years of manufacturing experience brings you this unit at the industry's most fair and honest price.

For complete information, write for Bulletin 823.

*Champions Are Built to Build Your Business*

CHAMPION PORTABLE MILL CO.
2109 COMO AVE. SOUTHEAST • MINNEAPOLIS 14, MINNESOTA

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

FINE QUALITY CANE
MOLASSES
DISTRIBUTORS BAYOU MOLASSES COMPANY
823 PERDIDO STREET
NEW ORLEANS, LOUISIANA
PHONE JA 5-0618

James L. Engfer

## James Engfer Joins Feedstuffs Staff

MINNEAPOLIS — Appointment of James L. Engfer to the editorial staff of Feedstuffs has been announced by Milton B. Kihlstrum, president of The Miller Publishing Co.

Mr. Engfer is a 1958 graduate of the University of Minnesota School of Journalism, where he was named "outstanding graduate." During his senior year at the university and during the past summer he worked for Greater Amusements Magazine and the Mississippi Valley Lumberman, both in Minneapolis.

## 400 Attend Annual Meeting of Illinois Turkey Association

TREMONT, ILL.—This year's turkey market will be slightly better than it was last year, it was forecast by Charles Keller, market specialist in Chicago, at the recent annual fall meeting of the Illinois State Turkey Growers Assn.

Some 400 growers and industry people attended the meeting at the Sinn Brothers Turkey Farm. It was the largest attendance in several years.

Mr. Keller recommended cautiousness on the part of producers to dispose of turkeys at their present low level. "Only by the use of extra caution can we prevent our crop of turkeys from falling into the hands of those who would use our product as a loss leader and thus demoralize the market," he said.

Dr. H. M. Scott, head of the poultry science department at the University of Illinois, said there is no research being done on turkeys at the university because funds are not available.

Dr. O. Burr Ross, head of the animal science department at the university, discussed the changing trends that have occurred in the turkey industry in the last 25 years. He said the present turkey is vastly superior in all phases to the turkey produced in the past due to better breeding, feeding and management.

Trevor Jones, past president of the National Turkey Federation, discussed expanding turkey markets in Illinois, and Dr. J. O. Alberts, department of veterinary science at the university, talked about treatment of turkey diseases.

## Serves Market Group

NEW YORK—Frederick E. McCormick, manager of marketing research for the American Cyanamid Co., New York, will take an active part in the activities of the 1958-59 season of the New York chapter of the American Marketing Assn., serving as assistant treasurer of the group.


# it pays to be a Dannen dealer

*"The Resale phase of the Dannen program is the most important to us. Our Dannen territory man really knows his stuff, and the help he gives us in calling on customers is invaluable. He really helps us sell feed!"*

**Sam Humphrey**
**President, Ramsey Feed Company**
**Scottsbluff, Nebraska**

Progressive feed dealers like Sam Humphrey know that Dannen supplies not only a fast-moving line of high-quality feeds—but selling aids that mean even more profits! Get more customers, keep more customers—with Dannen, "the feeds that mean profits for farmers and dealers who mean business!"

## Here's How Dannen Helps You Sell:

Premium Promotions
Product Control Department
Feeder Finance Programs
Effective Point-of-Sale Material
Outdoor Signs
Special Promotion for New Dealers
Sales Training School for Dannen Dealers and their Employees
Concentrated Farm Resale
Extensive Advertising
Newspaper
Farm Paper
Radio
Research Farm
Feeder Meetings
Dealer Meetings
New Eye-Catching Package Design
Local Newspaper Advertising
Live Displays

DANNEN

**DEALERSHIPS AVAILABLE**
WRITE TODAY FOR COMPLETE INFORMATION

*"the feeds that mean profit for farmers who mean business"*

# DANNEN MILLS, INC.

ST. JOSEPH, MO.

## Iowa Meat Packer Offers to Pay for Treatment for Grubs

AMES, IOWA—A major Iowa meat packer has agreed to pay Iowa cattlemen up to $1 per head for the cost of treating their cattle with systemic grub killers, according to Dr. Earle Raun, Iowa State College entomologist.

Dr. Raun said this is an important "break through" in the drive to rid cattle of grubs, and to eliminate the annual grub-fly problem in cattle herds.

"College tests with the newly-developed systemic insecticides showed cattle treated with these grub killers gained .1-.25 lb. more per day than untreated cattle on the same feed. They returned $1.23-$6.42 more per head when they were marketed," said Dr. Raun.

"The new packer offer is to stimulate use of these systemic grub killers and to permit general improvement of beef carcasses. The packer will pay up to $1 per head on the cost of systemic insecticide treatment to any owner who delivers cattle whose carcasses contain less than five grubs per animal between Dec. 1, 1958, and May 1, 1959."

The entomologist says experiments with the new insecticides show they will kill 95-100% of the grubs in cattle. Hundreds of cattlemen can qualify for the insecticide payment if they apply these insecticides properly between now and Dec. 15.

"Two types of systemic insecticides are available," Dr. Raun said. "One is called Trolene and is administered as a bolus (pill). The other is called Co-Ral and is sprayed on cattle.

"Either is effective. To kill the grubs they must be used on Iowa cattle between now and Dec. 15. That's the time when the Iowa cattle grubs are passing through the grub phase of their life cycle inside the animal. By January they will be encysted under the skin and the insecticide will not kill them as well.

"Cattlemen who wish to collect the packer's payment for successful systemic grub treatment should keep their dealer's statement for the cost of the chemical. They will turn this in along with their own statement that they have treated the cattle when they bring them in for sale."

Dr. Raun said at least three other interior Iowa packers are understood to be considering a similar offer for effectively treated cattle.

The insecticides are available throughout the state, Dr. Raun pointed out. All interested cattlemen will have an opportunity to treat their cattle this fall. Cattle brought in from Oklahoma and Kansas must be treated before Nov. 15 for good results, he said.

## Delmarva Poultrymen Study Labor Costs, Price Relationships

SALISBURY, MD.—Delmarva poultrymen have suggested to John Hargraves, president of the Delmarva Poultry Industry, that he form committees to study transportation costs, labor costs and comparative pricing procedures.

They want the committees, they said, as part of an effort to improve the competitive position of Delmarva poultrymen in relation to other areas of the country.

At a recent meeting in Selbyville, Del., the cost of feed shipment and other shipping expenses were discussed, and one committee was recommended to analyze transportation costs and ways to reduce them.

Labor costs also came under discussion by many poultrymen who felt that some steps would have to be taken to improve the industry's position in the negotiation of new contracts with organized labor later in the year. At present, basic wages on the peninsula are $1.14 an hour plus fringe benefits which producers say make real wages in the Delmarva poultry industry approach $1.35 per hour.

The poultrymen said they feel these wages are high when compared with wages of other competing areas, and that it should be suggested to the Meat Cutters & Butcher Workers Union at the pending negotiations that although two years ago, at the time of negotiation of the present contracts, the union had indicated it planned to organize the other poultry areas of the country, it has not done so.

They said the hourly wage rate in some unorganized areas is $1 per hour. This places Delmarva at an unfair disadvantage in price competition, they said, and they requested a committee to study labor costs.

W. T. McAllister, agricultural economist in the University of Delaware extension service, a guest speaker, suggested that the committee to study labor costs might also study ways of better organizing poultry producers so they would be on a stronger basis when they negotiate with labor.

A third committee was recommended to study the price relationships between Delmarva and other areas of the country, and an analysis of prices was suggested to better advise the industry on ways to improve it competitive position.

## First Annual WSC Poultry Institute Set

PULLMAN, WASH.—The first annual Washington State College Poultrymen's Institute, designed to "present information of primary interest for poultry servicemen, county agents working with poultry and commercial poultrymen," has been set for Oct. 23-24, at the campus here.

Some of the highlights of the two-day affair include: A discussion of the poultry serviceman's job, a discussion of vertical integration in the poultry industry, a panel on the future of the poultry industry in the Pacific Northwest and talks on poultry economics and poultry diseases.

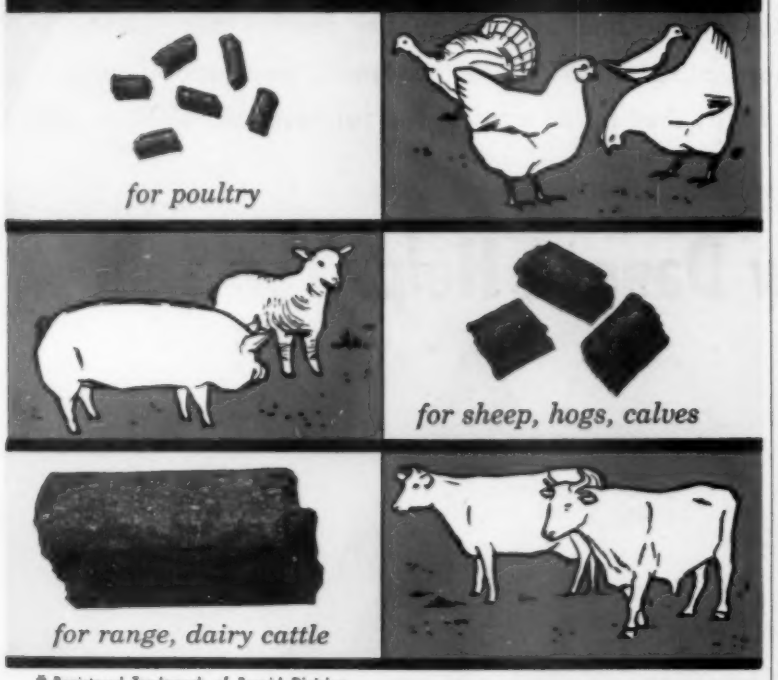
Dr. Conwell W. Johnson

**LIVESTOCK RESEARCH—Dr. Conwell W. Johnson of Ames, Iowa, has been appointed livestock research associate at the General Mills Larro Research Farm at Indianola, Iowa, it has been announced by Dr. H. Ernest Bechtel, director of the farm. Dr. Johnson will plan and supervise all livestock research feeding experiments at the farm. He holds B.S., M.S. and Ph.D. degrees from Iowa State College, and has served as assistant county extension farm director in Kossuth and Grundy counties in Iowa. He also had 20 months of field experience in selling formula feeds. Dr. Johnson received his Ph.D. degree in animal nutrition this year.**


for producing pellets economically

use NATIONAL Western Bentonite

THE SUPERIOR BONDING ADDITIVE




* Registered Trademark of Baroid Division, National Lead Company

BAROID

BAROID DIVISION
National Lead Company

National Western Bentonite's lubricating quality assures faster, easier pelletizing . . . reduces die wear . . . increases production efficiency . . . lowers manufacturing costs. At the same time it provides stronger pellets that won't crumble—yet, are easily eaten by both poultry and livestock. This superior bonding additive enhances sales appeal with its surface gloss—locks in nutritional value of feed.

Mail coupon today for additional information on NATIONAL Western Bentonite, prices and distributors.

BAROID DIVISION • NATIONAL LEAD COMPANY 8725
ROOM 1864, McCORMICK BUILDING
332 SOUTH MICHIGAN AVENUE CHICAGO, ILLINOIS

Please send me your latest literature.

NAME_____

COMPANY_____ TITLE_____

ADDRESS_____

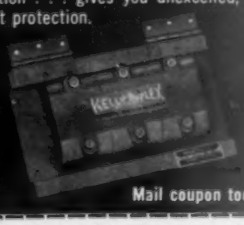
CITY_____ STATE_____



PROTECT your expensive processing equipment from these culprits

. . . with a LOW COST KELLY DUPLEX MAGNETIC SEPARATOR

The powerful Kelly Duplex Magnetic Separator keeps dangerous tramp iron from entering your hammermill or other processing machinery. Available in any size to meet your needs, it costs nothing to operate . . . is unaffected by vibration . . . gives you unexcelled, low cost protection.



Mail coupon today!

The Duplex Mill & Mfg. Co., Springfield, Ohio
Without obligation, send me complete information on the Kelly Duplex Magnetic Separator.

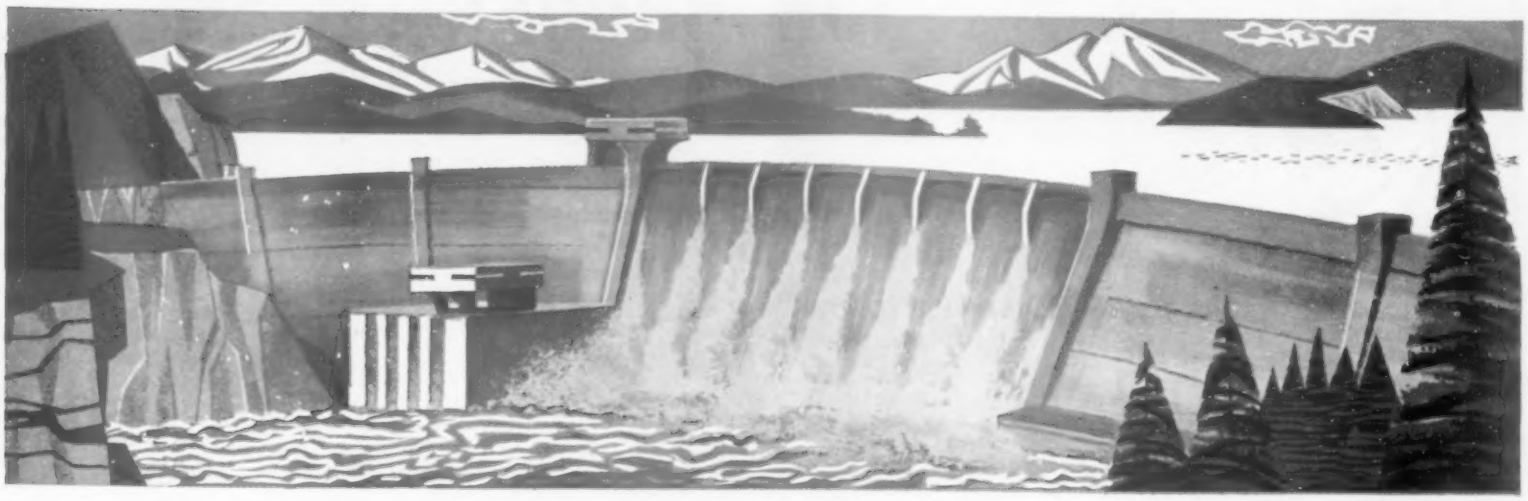
NAME_____

FIRM_____

ADDRESS_____

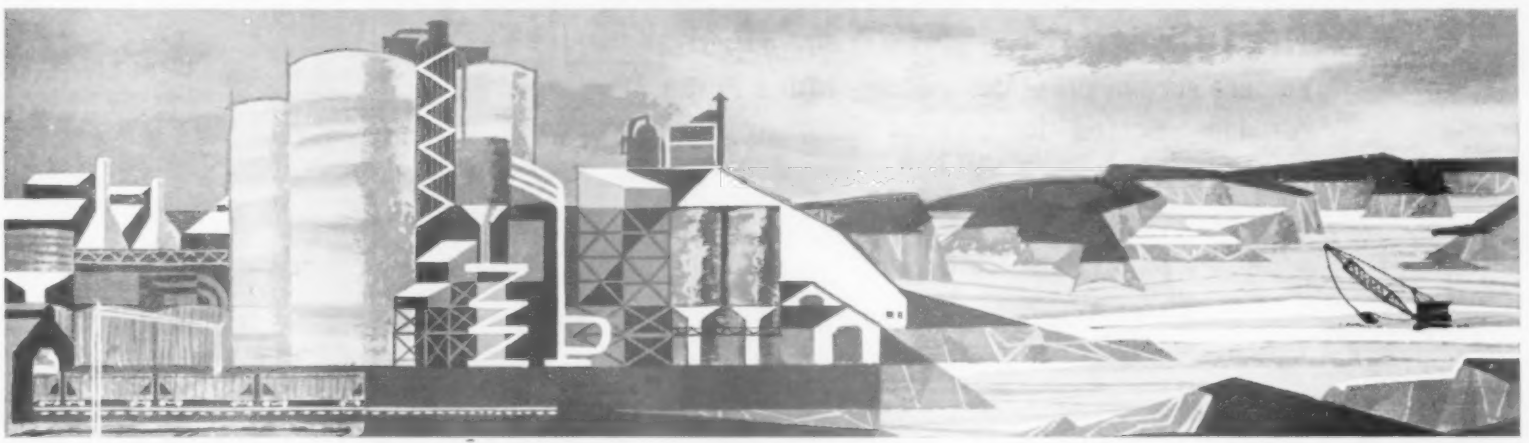
CITY_____ STATE_____

*Natural wonders* made dynamic by man . . .



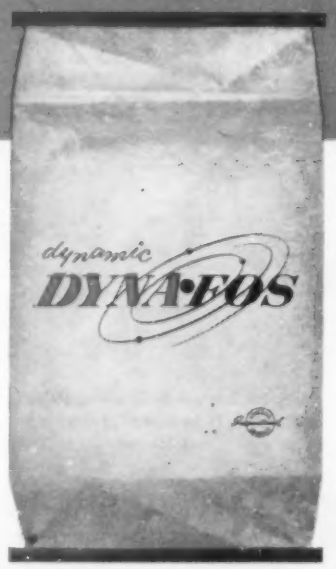
The planet we inhabit holds untold riches which creative man endows with utility and new value

*and raw-phosphate deposits*
made dynamic by modern chemistry



*to give you*

*dynamic*
DYNA•FOS®




today's most dependable feed phosphate

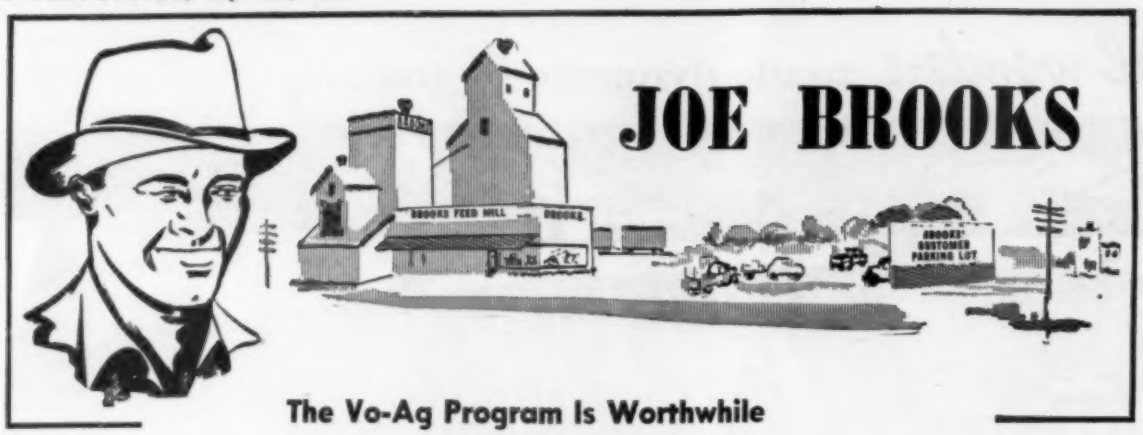
Nature laid down beds of raw phosphate centuries ago. Today International Minerals and Chemical Corporation takes it from the ground . . . transforms the crude ore into phosphate that is *feed dependable*. Result: Dynamic DYNAFOS — uniform in quality, low in fluorine, high in biological availability, easy to mix and handle. Write or call for the whole story.

Creators of Living Minerals — MINERALS International CHEMICALS

*PHOSPHATE CHEMICALS DIVISION*

**INTERNATIONAL MINERALS & CHEMICAL CORPORATION**

*Administrative Center: Skokie, Illinois*




## The Vo-Ag Program Is Worthwhile

**By Al P. Nelson**

When Windy Kramer, the routeman, came in that evening, he walked into Joe's office and laid down a stack of orders. A smile spread across his tan face. Windy was married, had two children and had been with Joe for many years. He was a faithful and hard worker and made a good salary plus extra commissions on the route.

"I can't figure it out, Joe," he said, "but my route orders are still going up despite the traveling feed store that Molasses Moeller and French La Fave haul around with the mobile mill unit. I was scared stiff they'd cut into my sales when they started that deal."

Joe chuckled, thrust his pencil behind his right ear. "That's because you are a good salesman, Windy. And also, our advertising and market penetration is helping, too. Molasses and Frenchy are getting acquainted with farmers better than you did in some cases, and so they get sales. Then they turn leads over to you on stuff they don't carry in the store. You do the same for them."

Windy grinned. "Well, I've got another reason. Folks know that Joe Brooks modernized his custom mill. They know, too, he has installed a pellet mill and makes his own brand of feed as well as handling two other lines. They know he's got a mobile mill in the field and also has a big farm supply store. This shows farmers that Joe's policies are right; that he has what farmers want, and so lots more farmers want to get on the bandwagon."

Joe flushed a little. "Well, I'm not that important, Windy, but it's nice for you to say so. I think all of us are working closely together here for mutual benefit. Our profit sharing deal benefits all of us. And I think a helping fact is that you now have pellets and crumbles to sell, plus those extra farm supply store items we've stocked."

Windy nodded. "I think so, too. And farmers are wide awake. Jim Peterson asked me today about that plastic silo he saw pictured in a farm magazine. Asked us to get prices on it. That's the third inquiry we've had."

Joe nodded. "Yeah I wrote to a jobber on that yesterday. I should hear any day. Believe me, we want to handle any new product that the farmer wants and which can prove itself."

### New Storage Idea

"Ed Gilson told me he might buy fertilizer right after the first of the year to get the low price," Windy said. "Those plastic bags did the trick. Says he can store them outside with a big tarp over them and they won't take up room in his shed."

Joe smiled. "Good. Things certainly are changing on the farm. First thing you know the farmer will have teletype right into his barn giving livestock quotations while he milks."

Windy laughed, then crossed his leg. "Joe, while I was eating my lunch in the truck today at the Hodgson farm, their son Frank—he's 16 and in high school—was telling me a lot of interesting things about vocational-agriculture."

"Yes?"

"He told me that surveys show that vocational-agriculture graduates have mean gross livestock products in 1957 in Iowa of $3,982 compared with $2,576 for those who did not have vocational-agriculture in school. Furthermore, their use of 24 improved production and management practices was 72.4 against 66. And he

(Continued on page 22)


Aim For Better Profits . . .
Install PRATER BLUE STREAK MILLS

You are sure of profitable grinding with a Prater Mill
"Custom Selected" for type and size to fit your operation

PRATER BLUE STREAK DUAL-POWER ADVANCE CUSTOM MILL
with Pratermatic Screen Changer For Granular Grind and unlimited conveying capacity in any direction.
PRATER BLUE STREAK DUAL SCREEN HEAVY DUTY MILL
Used in the granular reduction of soybean, linseed and cotton seed meal, tankage and meat-scraps.
PRATER BLUE STREAK FIBRE GRINDER WITH SEPARATE FAN
Grinds toughest fibrous materials into specific sizes (for production use or blending with other materials).
BLUE STREAK Prater
PRATER BLUE STREAK ADVANCE CUSTOM MILL
Produces the famous and exclusive Triple Reduction GRANULAR GRIND
PRATER BLUE STREAK STREAMLINER
Used for processing grain in small feed stores and hatcheries.
PRATER BLUE STREAK HEAVY DUTY GRINDER
Designed to handle all dry materials, from a few pounds to continous production; produces an even granular grind sized to desired degree of fineness.
PRATER BLUE STREAK FIBRE GRINDER
with fan on Rotor Shaft. The finest, lowest cost-per-ton grinding and sizing equipment. Large capacity for continuous production.
PRATER BLUE STREAK HAY & GRAIN GRINDER
Especially designed for grinding hay, roughages, shucky ear corn, small grain and other bulky feed.

Prater Blue Streak Mills are available in speeds of 1200-1800-3600 RPM. To be sure of profitable grinding, let us help you select a mill that fits your operation and suits your plant.

GRANULAR GRIND IS GOOD BUSINESS!

PRATER PULVERIZER CO.
1537 S. 55th Court, Chicago 50, Ill.

FREE!
These books on Mixing and Grinding

Prater Pulverizer Company
1537 S. 55th Court, Chicago 50, Illinois

Please send me the books I've checked — no obligation to me, of course!
- ☐ Granular Grind is Good Business!
- ☐ Prater Fibre Grinders
- ☐ The new Blue Streak Hay & Grain Grinder
- ☐ Blue Streak Twin Spiral Mixing

Name_____
Address_____
City_____ State_____

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

Calcium Carbonate of Constant High Purity
Calcium Carbonate Company
520 South 4th St., Quincy, Illinois
Box 409, Carthage, Missouri
325 W.O.W. Bldg., Omaha, Nebraska

# Our industry's most important man is the independent feed dealer

In every one of the more than three-score years of Purina history, we have recognized the Independent Dealer as the most important man in our industry. He's the man who made Purina the world's largest formula-feed manufacturer.

Today, progressive Independent Dealers display the Checkerboard Sign. Every one was chosen with great care, for the Independent Purina Dealer must be a man who wants to earn his profits by serving animal agriculture.

Purina policies are made to support the Independent Dealer. Chows are formulated to meet his market needs. Merchandising plans are made with his store in mind, advertising talks in the language of his customers and prospects. Such supports as money management, inventory control, sales training and on-the-farm selling are geared to his needs. And the primary aim of Purina Research is to help the Independent Dealer give better service to his community.

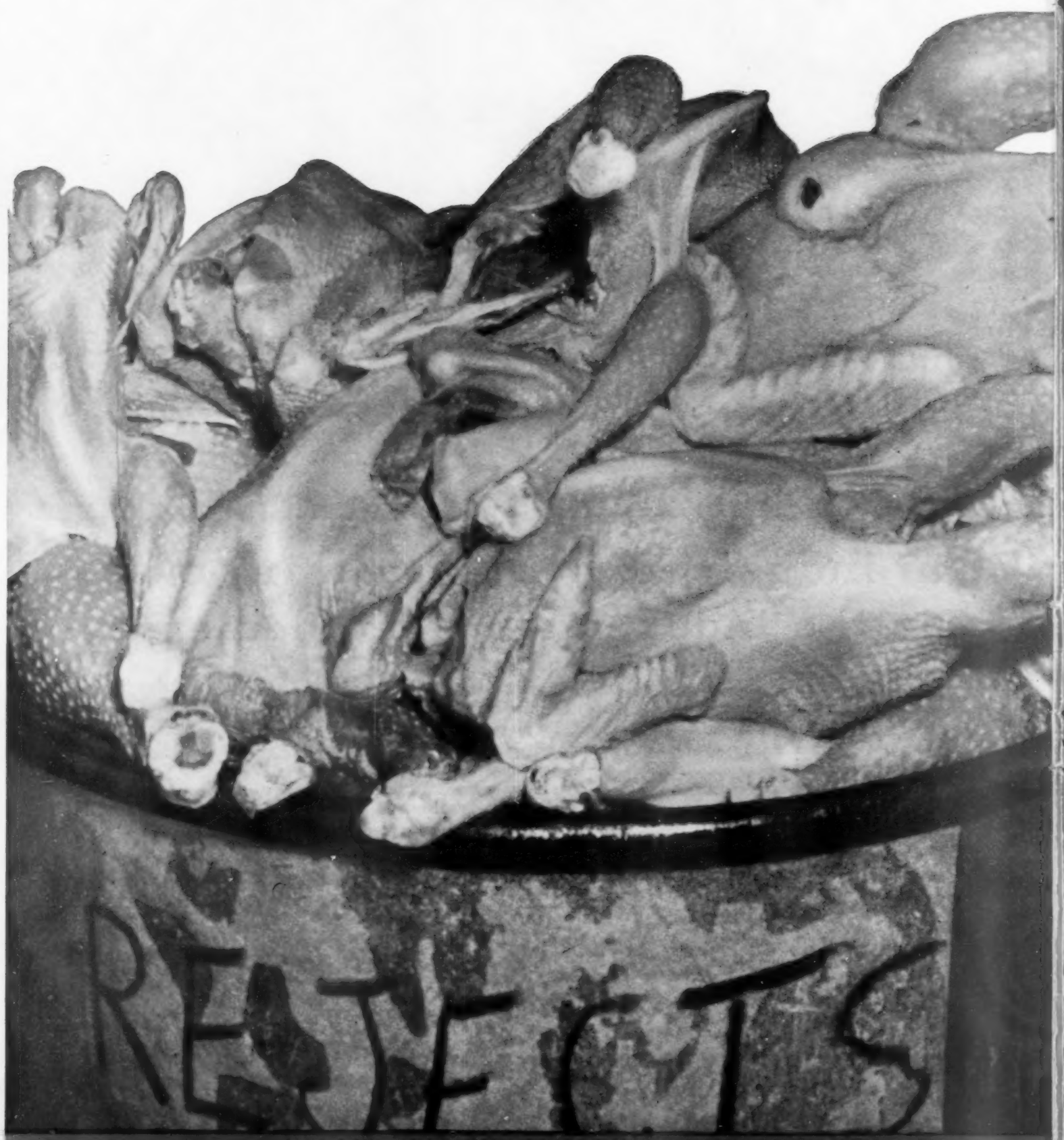
Purina is the champion of the Independent Dealer.

**PURINA...YOUR PARTNER IN SERVING ANIMAL AGRICULTURE**

CYANAMID

Urge your broiler

# "Start now to




ANIMAL FEED DEPARTMENT • AGRICULTURAL DIVISION

growers to

# reduce throw-outs!"

INSPECTED FOR WHOLESOMENESS U.S. DEPARTMENT OF AGRICULTURE P-00

Winning this mark after January 1, 1959 will be a major concern of processors, broiler growers and – yes – feed manufacturers.

All will profit if every possible step is taken to minimize "throw-outs." This means, in addition to good sanitation, safeguarding health of broilers from the day they're hatched until they're marketed.

When your broiler feeds contain AUREOMYCIN® Chlortetracycline you have a potent weapon to protect your broiler growers and to safeguard processors.

Your good feeds, plus AUREOMYCIN, provide "health insurance" for two costly diseases: chronic respiratory disease and synovitis. These two diseases are the cause for lesions in the air sac, joints and breasts which result in the vast majority of market condemnations.

Research efforts, on the part of Cyanamid and of poultry pathologists across the country, have revealed that CRD and synovitis must be controlled by a *continuous, day-to-day program* to minimize lesions.

Continuous feeding of your good broiler feeds with high levels of AUREOMYCIN is your growers' best assurance of suppressing CRD and preventing synovitis.

Be sure your broiler feeds contain AUREOMYCIN. Urge your growers to give this feed the *first* day and *every* day! Urge them to "start *now* to reduce throw-outs!"

YOUR BRAND
**Broiler Feed**
with
**Aureomycin**

AMERICAN CYANAMID COMPANY • NEW YORK 20, N. Y.

**NEW OFFICES—Leo Murphy (third from left), board chairman of Allied Mills, Inc., Chicago, conducts a tour of the company's new offices in the Morton Salt Building, 110 N. Wacker Drive, Chicago, for Harris Lyon and John Richardson (right) who are now located in Chicago. Assisting in the tour are (left to right) E. D. Griffin, Allied Mills, vice president in charge of sales, and E. W. Lenz, president.**

quoted a raft of vo-ag statistics which show that vo-ag graduates do much better than average farmers because of their training. He says that Verle Swenson, their vo-ag teacher at the Hansen's Creek high school, is a whizz."

"I met the man at a Kiwanis meeting last winter," Joe said. "I like him very much."

**Swenson, the Vo-Ag Teacher**

"Well, Frank Hodgson said that all the boys like Swenson and that many of them are going to stay on the farm because Swenson has sold them on the idea they can make money by managing properly."

Joe's blue eyes lighted. "Is that so? Well, that's very interesting. Farm boys need guidance along this line. Lots and lots of farmers are hoping their sons will stay on the farm. It's a good life."

"I got to thinking," Windy went on, "that maybe we could invite Mr. Swenson to one of our feeder meetings and he could talk to the farmers on those 24 management points that their sons are learning in class."

Joe whistled. "That would be excellent if he would do it. And he might welcome an opportunity to address farmers like that. We could have a short beef cattle feeder meeting, and then give Swenson an hour to give his talk."

"If those farmers use those 24 management points like vo-ag grads do, we'll have farmers around here who'll be earning more net profit, Joe, and maybe they'll buy more feeds and related farm supplies."

"That's right, Windy. When a farmer makes $500 to $1,000 more net profit he can do a lot with it. I'll contact Mr. Swenson and see if he'll come and maybe he'll give us some photos on vo-ag work that we can post on our bulletin board to drum up interest. Then we'll send a special announcement to farmers and also mention the meeting in our monthly bulletin. That should be publicity enough, plus maybe a newspaper ad."

Windy uncrossed his legs. "Joe, do you think we could also invite the vo-ag boys? I think they'd love to come and be in the limelight with their teacher. And maybe we could give them doughnuts and coke afterward."

"A good idea," declared Joe. "I know when I was a boy I felt real big when I associated with men. After all, those vo-ag boys are buying feed from us now in small quantities. Soon they'll be on their own and buying lots more feed. Besides, I want to learn what those 24 good farm management points are myself."

"You won't keep me away, either," Windy grinned. "I figure those 24 points are going to help me sell more merchandise and feeds."

## Eastern Iowa Expands Grade A Milk Interest

AMES, IOWA — New milk demands from growing cities, particularly St. Louis, are expanding eastern Iowa interest in grade A milk production, new milking parlors and installation of bulk milk tanks, according to Earl Wright, Iowa State College extension dairyman.

He said the college dairy industry department and the agricultural engineering department had been called in this summer and fall by county extension directors in Lee County in the south, Poweshiek in central Iowa and Chickasaw in the north to help dairymen with grade A milk expansion plans.

In these counties the dairymen are asking for help in setting up modern "loose housing," milking parlor, pipeline milker and bulk milk tank operations. In all, the stimulus was the demand for more milk to meet demands of St. Louis' rapidly growing population. Mr. Wright said the new market opportunity is leading to expansion of some herds of 30 cows or less to 50-150 cows.


Ray Ewing ATERRIMIN

*The First* Fermentation Product with a *Guaranteed Potency*
Developed and Produced Primarily as a *Growth Stimulant*

Ray Ewing ATERRIMIN—The product with a purpose. The first fermentation product with a guaranteed potency developed and produced primarily as a growth stimulant.

20,000 Units GUARANTEED POTENCY Less than 50¢

Ray Ewing ATERRIMIN—The new growth stimulant which is non-toxic and has proven stability.

Ray Ewing ATERRIMIN—Has produced excellent growth response even in the presence of fish solubles, dried whey or other growth additives in rations.

...QUALITY GOES IN... 20,000 units Guaranteed potency less than 50¢! BEFORE THE NAME GOES ON

Ray Ewing ATERRIMIN—Can be profitably included in Starter and Grower Formulas in every part of the country.

Ray Ewing ATERRIMIN — Supplies low cost chick-growth stimulation at less than 50c per ton of feed.

Ray Ewing ATERRIMIN—Guaranteed potency easily determined by microbiological assay for Aterrimin activity.

Ray Ewing ATERRIMIN—Produced exceptional results in chicks, broilers and turkey poults.

Ray Ewing ATERRIMIN — Now available through 5 Ray Ewing Premixing Plants and through the Ray Ewing Representative serving your area.

QUALITY GOES IN THE Ray Ewing COMPANY BEFORE THE NAME GOES ON
PASADENA
BOONE, IOWA
FORT WORTH, TEXAS
COUNCIL BLUFFS, IOWA
LANCASTER, PENNSYLVANIA



Manufacturers and Suppliers of

EXPELLERS
SOLVENT EXTRACTION EQUIPMENT
DRYERS • FLAKERS
GRAIN EXPANDING EXPELLERS
MATERIAL HANDLING EQUIPMENT

Write for information and prices
The V. D. ANDERSON COMPANY
Division of International Basic Economy Corporation
1900 West 96th Street, Cleveland 2, Ohio

# BUTLER

## POLLYPHOS . . . OFFERS . . . TO YOU

## A defluorinated phosphate of . . . proven high quality

America's leading feed and mineral manufacturers have used POLLYPHOS for years as a source of phosphorus. The texture . . . the blending characteristics . . . of POLLYPHOS . . . make this product a most desirable source of phosphorus supplement for . . . use in formulating all types of livestock and poultry feeds.

POLLYPHOS contains a phosphorus content of 19% . . . a minimum of 32% — maximum of 35% Calcium . . . and no more than .19% Fluorine.

POLLYPHOS has been tested for biological availability . . . proved to be a highly available source of phosphorus.

Butler Chemical Company is geographically located to insure prompt and dependable service to those areas West of the Mississippi.

Call, wire or write us, or the sales agent nearest you, for delivered price of POLLYPHOS to your plant.

Butler
CHEMICAL COMPANY

**BUTLER CHEMICAL COMPANY**
LOCATED ON THE HOUSTON SHIP CHANNEL

BC 5816

**P. O. Box 938 • Phone ORchard 2-7587 • Galena Park, Texas**

SALES AGENTS: Warner Brokerage Co., Inc., Minneapolis; Carroll Swanson Sales Co., Des Moines; James P. Sprigg Co., Los Angeles; White Star Concentrates Co., Portland; E. A. Towns Limited, Vancouver 1, B. C.

**REFRIGERATED TRUCK—This is the egg marketing service refrigerated truck in use by the Sunglo feed division of the Fant Milling Co., Sherman, Texas. Eggs are picked up from dealers three times a week and hauled to Wilson & Co. in Dallas in this truck.**

## Fant, Wilson & Co. Announce New Egg Marketing Program

SHERMAN, TEXAS—An egg marketing program that features reduced handling in the farmer-to-consumer chain is now operating in this area. Principals in the program are the Fant Milling Co., Sherman, and Wilson & Co., Inc., Dallas.

Like most of the egg programs of today, this one has a strict feeding and management program, provided by the Sunglo feed division of Fant. All laying flocks are kept in confinement. Eggs are gathered four times a day and put under mechanical refrigeration, which each participating poultry farm must have.

A different feature of this program is that the eggs are graded as to quality and size by the flock owner, packed in Wilson certified egg cartons and are not handled again, except for spot checking, until they reach the hands of the consumer in the grocery store.

The flock owner delivers the eggs to his Sunglo dealer three times each week where they are kept under refrigeration. A Sunglo refrigerated truck makes the rounds of dealers three times a week and then delivers the eggs to Wilson & Co. from where they are sold to grocery stores, restaurants and institutions.

Each carton of eggs is identified with the producer's name and address placed on the carton prominently with a sticker. This gives the producer an identity so that there is no temptation for him to be slack in the production, grading and packing of the eggs.

The program was set up by J. W. Banister, sales manager for the Sunglo feed division of Fant Milling Co.

**FANT, WILSON & CO. CARTON—Although eggs in the Fant Milling Co. program are marketed under the Wilson & Co. name, they are identified with the name and address of the individual producer and with the feed that was used.**

## Economist Says Slight Decline in Prices of Feeder Cattle Expected

URBANA, ILL. — Some decline is likely this fall in prices of feeder and stocker cattle, but no major break is expected unless range conditions deteriorate considerably, according to Prof. George B. Whitman, farm management specialist at the University of Illinois. Prof. Whitman's remarks appeared recently in "Livestock Outlook News," published by the university.

Prof. Whitman notes that January-through-July average prices at 10 markets were more than $6 cwt. higher this year than in 1957. The average for this year was about $25.25 compared with $19.00 for the same period last year.

He listed three reasons for the higher prices this year:

1. Cattle are at the bottom of a production cycle. Ranchers in former drouth areas are restocking ranges and building up breeding herds.

2. Profits from feeding cattle this past year were very favorable. Prices of fed cattle averaged $2-$5 higher than last year.

3. Farmers in the corn belt and elsewhere are "up to their ears" in relatively low-priced corn and other feed grains, some of which are of low quality.

**Calf Crop Same Size**

The 1958 calf crop will total about 40.9 million head. This is practically the same as last year, and only 4% less than the all-time high four years ago. The reduction is entirely in dairy calves. The calf crop in the range states will be 3% larger than last year, Prof. Whitman said.

The supply of yearlings will be at least as large as last year, he believes. This is indicated by the fact that the number of calves on hand Jan. 1 was equal to that of a year earlier, and slaughter has been low.

**Richard A. Phelps**

## Richard Phelps Named To Research Position

DALLAS, TEXAS — Richard A. Phelps will assume the duties of assistant director of research and education for the National Cottonseed Products Assn. Oct. 15, with headquarters in Dallas, according to an association announcement.

While Mr. Phelps will be directly associated with all phases of the association's research and educational program, a major portion of his activities will be devoted to development and extension of the comprehensive research effort which has been approved by the research committee and the board of directors.

Mr. Phelps holds a B.S. degree in agriculture from Purdue University, and received an M.S. degree in dairy production in 1956 from Michigan State University. He has completed all course and research studies required for a Ph.D. degree in animal nutrition and biochemistry. In his new work, Mr. Phelps will be closely associated with research workers in colleges and government research agencies, cotton oil mills, feed manufacturers, extension and teaching workers, and livestock and poultry organizations.

## New Feed Plant Opens

BLAIRSVILLE, GA. — Mountain Poultry Co.'s new $40,000 feed plant near Blairsville is in operation. The firm, now feeding 275,000 broilers, turns out 7,560,000 lb. of feed a month.


**4 Heil Dryers make citrus pulp feed!**

*"We use one 6,000-lb and three 15,000-lb Heil dryers at our two Fruit Industries, Inc., plants in Florida to produce citrus pulp cattle feed. They have given us excellent moisture control, ideal particle size, economical and dependable service. The pulp comes from tons of oranges squeezed for fresh juice. The juice is refrigerated and shipped by water to New York City and distributed through local milk deliveries as far west as Iowa."*

*Anthony T. Rossi, President*
*Fruit Industries, Inc.*

Food by-products are carried on a stream of hot air in the Heil dryer. Having three cylinders in one drum accurately controls moisture and lowers costs by—
Automatically providing a 3-stage drying process with changing temperatures and air velocities ideally suited to changing moisture content.
Automatically establishing correct exposure time for each particle, based upon weight due to moisture content.
Making use of radiant heat given off by center and intermediate cylinders.
Compound showering flights assure ideal utilization of the drying medium, maximum air activity in all areas of the drying drum, and maximum evaporating capacities within a compact machine.

WRITE, WIRE or Call for further information.

THE HEIL CO.
(Manufacturers of Andrier Dehydrators for the Arnold Dryer Co.)
3000 W. Montana Street, Milwaukee 1, Wis.



MOST POWERFUL ANTIOXIDANT

Griffith's G-12

FOR LOW-COST STABILITY OF FATS

RILEY Feed Company

BROKERS—
COMPLETE LINE OF FEED INGREDIENTS

639 BOARD OF TRADE
KANSAS CITY 6, MO.
BALTIMORE 1-2960

# FEED NUTRITIONISTS, *we leave it to you:*

# Can you cut ingredient costs with Torafeed yeast at 8½¢ a pound?*

## *Compare these yeast analysis figures from* FEEDSTUFFS' *1957 table with Torafeed analysis from* RED STAR *laboratories*

| NUTRITIONAL FACTORS | Regular Brewers Dried Yeast | Regular Torula Dried Yeast | Red Star Torafeed Averages | Check here values most important to you and ask yourself if Torafeed isn't your best value source. |
|---|---|---|---|---|
| Protein | 45% min. | 48% min. | 51.5% | |
| Fat | 1.0% min. | 2.0% min. | 4.8% | |
| Fiber | 2.7% max. | 2.7% max. | 0.5% | |
| Riboflavin mg. per lb. | 15 | 20 | 28.5 | |
| Niacin mg. per lb. | 203 | 220 | 252 | |
| Pantothenic acid mg. per lb. | 50 | 24 | 26 | |
| Choline mg. per lb. | 1750 | 1300 | 1270 | |
| Folic Acid mg. per lb. | 4.4 | 10 | 9.1 | |
| Arginine | 2.2% | 2.6% | 3.6% | |
| Lysine | 3.0% | 3.8% | 4.1% | |
| Methionine | 1.0% | .80% | .80% | |
| Cystine | .50% | .60% | .70% | |
| Tryptophane | .81% | .50% | .70% | |
| Glycine | 1.7% | 0.2% | 2.4% | |

## See why more and more nutritionists are specifying Red Star Torafeed

The chart above—along with the price schedule at the right—explains the rapid growth of Red Star Torafeed yeast. Check the food factors most important to you, then compare Red Star Torafeed prices with the amount you are currently paying. This will give you the approximate saving you can make for your company by using Torafeed.

## Where to save money with Torafeed

**CATTLE FEED**—Tests at Ames, Iowa, showed that torula yeast stimulated rumen bacteria, producing greater weight gains per pound of feed, in less time for less money, and gave a greater number of animals grading choice. A full report will be sent to you on request.

**MINK FEED**—Michigan State University experiment reports show torula yeast gives excellent results. We will be glad to send you test results.

**PET FOODS**—As a protein replacement (see above chart), Torafeed is high in quality and low in price. The analysis chart shows several plus values for Torafeed as an ingredient.

**FISH FOODS**—Reports at an Animal Nutrition Research Council meeting showed torula was by far the most economical yeast to use in fish food. Wisconsin experiments earlier showed torula yeast stimulated growth more effectively than other types of yeast. We'll be glad to send you a reprint on request.

## *Send for* FREE *sample*

Write today for a free sample of Red Star Torafeed (dried torula yeast). If you mention the types of feed you manufacture, we will send you research reports relating to your area of interest. Address inquiries to Red Star Yeast & Products Co., Department F, Milwaukee 1, Wisconsin.

***USE THESE TORAFEED PRICES To Figure Your *Savings*:**

The exact price you pay for Red Star Torafeed (dried torula yeast) depends on your location, and on the quantities purchased. Prices here are F.O.B. Green Bay, Wisconsin—Net 10 Days. Freight equalized with nearest producing point. Packed in 50-lb. multi-walled paper bags. Torafeed is not a by-product. It has consistent quality throughout the year. The price and the supply are steady.

| | Price per Pound |
|---|---|
| Carlot (40,000 lbs. minimum) | 8½¢ |
| Trucklot (20,000 lbs. minimum) | 8½¢ |
| 10,000—19,950 lbs. | 8¾¢ |
| 2,500—9,950 lbs. | 9¼¢ |
| 2,450 lbs. or less | 10¢ |

## Torafeed Guaranteed Analysis

Protein (crude) ..... min. 45%
Fat ..... min. 3.5%
Fiber ..... max. 1.5%
Moisture ..... max. 8%
Ash ..... max. 9%

**RED STAR**
YEAST & PRODUCTS CO.
MILWAUKEE 1, WISCONSIN

# Application of Linear Programming To Feed Milling Problems

**Linear programming can be and is likely to become a very important technique in feed formulation and modern feed mill management. This article is the first in a series explaining just what linear programming is and how it can be applied in the feed industry.**

**By Dr. Robert F. Hutton**
**Pennsylvania State University**
Copyright 1958, Robert F. Hutton

*EDITOR'S NOTE: Expected to be of increasing importance in the feed industry is the use of a technique called linear programming. Some feed companies are now using this technique, with electronic computers, in computing least-cost feed formulas, and others are generally familiar with this system of feed formulation. However, many are not. Dr. Robert F. Hutton of Pennsylvania State University has been a leader in research on the application of linear programming to feed mix problems. The accompanying article is the first of a series in which Dr. Hutton will explain linear programming and its possible use by feed mills—not only in formulation but also in mill management. He first explains what linear programming is and then will outline some applications of the technique.*

Do you ship as much as 100 cars of feed per month? If so, chances are that someone has tried or soon will try to sell you on using electronic computing equipment in formulating your feeds. Should you buy? Well, it all depends upon your particular set-up. In any event you'll want to be informed about the new techniques that are being talked about. Only if you are informed will you be able to properly judge the potential for the new methods in your business.

The more important of the possible applications of these techniques will be discussed in this series of seven articles. The first two articles in the series will be devoted to a general discussion of linear programming—the basic tool of the new method. Subsequent articles will deal with specific applications of this tool to the solution of a miller's problems.

If you haven't yet heard of linear programming, please do not be dismayed by its ponderous title. It's basically quite a simple set of concepts. It's also very new among the tools of analysis, so it's not surprising if you are totally or almost totally ignorant of it.

It's difficult to trace the history of the development of a new method such as linear programming. There are many independent or related lines of development that culminate in a successful method. The first successful application appears to have been made by a mathematician named George B. Dantzig in 1947, just 11 years ago. General public knowledge, even among mathematicians, is even less than that since Dantzig did not publish details of his procedure until 1951 (1). Almost immediately an agricultural economist, F. V. Waugh of the U.S. Department of Agriculture, saw the potential of the method for feed mixing and published results of an application in 1951 (2). Even in this day of rapid spread of technological advances, it is hardly surprising that all millers are not experts at linear programming after only seven years of casual exposure to it. Many methematicians for that matter have never heard of it.

### What Is It?

So much for history. Just what is linear programming? Technically it is a mathematical procedure for obtaining a value weighted solution to a set of simultaneous equations and/or inequations. This may not help much in relating the method to your feed mixing problem, however. To further simplify the explanation, let's forget for the moment that this is a mathematical procedure and not bother ourselves with the manner in which a solution is obtained but concentrate instead upon the kind of problems it will solve for us.

In choosing the feed ingredients to combine into a mix you are concerned basically with two aspects. First, the mix must meet your quality standards, and secondly, subject to its meeting your quality standards, you want it to cost as little as possible. Chances are you have never looked upon this as a mathematical problem. But, at least major parts of it can be stated in mathematical terms. Even if you had looked upon this problem in mathematical terms, before the days of linear programming it would have been of small practical value to you. The problem of solution would have loomed so large it would have been impractical to have solved it on even very large electronic computers.

Consider, for example, a relatively simple mix problem of only six quality specifications and only ten ingredients; this could have as many as 34 trillion feasible solutions. Even though this is the maximum and many of these solutions could be disregarded, the number of mixes that would be within the bounds of practicality would be prohibitively large. No wonder we have relied upon the cut-and-try method of mix formulation so long.

Linear programming has changed the dimensions of the problem so drastically that the mathematical model of the mix problem may be meaningful to you. It has done this by eliminating the great bulk of the possible solutions. It centers the effort upon those solutions that are of economic interest for a given set of ingredient prices. This is what is implied by the term "value weighting" in the technical description of linear programming given previously.

### Least-Cost Solution

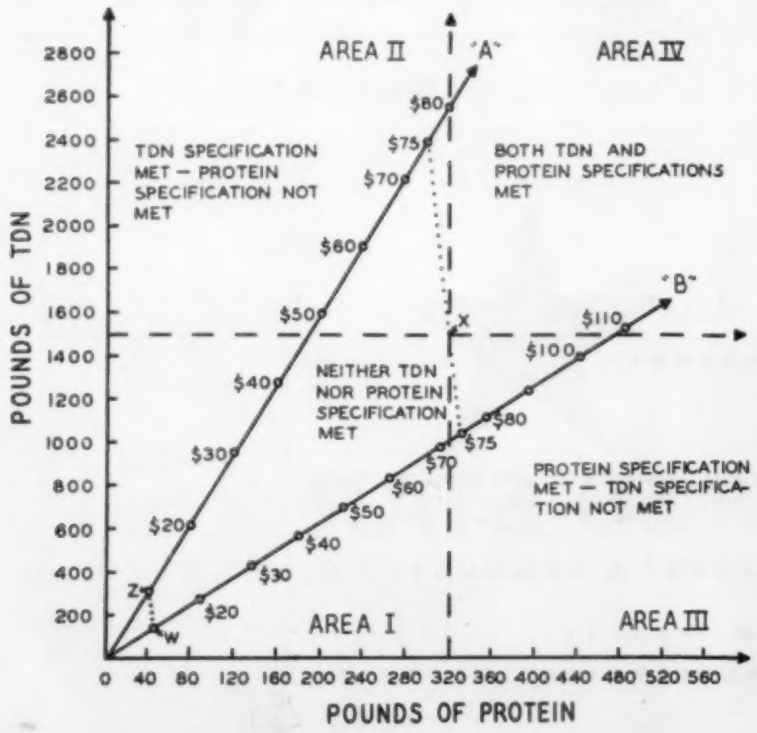
Essentially the procedure is that of beginning with a solution to the mix problem and considering only a relatively few alternative mixes at one time. If any one of these alternatives is better than the first, you select the one that is best of that set and proceed to compare it with another set of alternative solutions. You repeat this process until you can find no alternative solution that is lower in cost than the present solution. In the case of the mix with six quality restrictions and ten ingredients, you probably would never have to consider more than 500 alternative solutions to select the one least cost solution out of some 34 trillion possible solutions. And, you can rest assured upon perfect mathematical proof that your solution is absolutely least-cost.

These 500 alternative solutions may strike you as still quite a burden, but here is where the electronic computer salesman comes to your rescue. Even a moderate scale computer can whip through a problem of this size in from 3 to 5 minutes. Of course, most of your problems will be larger than this, but there are some shortcut procedures that we shall consider later that will make it unnecessary to consider even 500 solutions to this problem and which yield very great savings on your larger problems. Now that you have at least a partial grasp of the power of this new management tool, let's consider some relatively simple applications and relate this method to some of the tools you have been using for years.

**GRAPHIC ILLUSTRATION OF LINEAR PROGRAMMING** — As is frequently the case with mathematical concepts, linear programming can be illustrated by geometrical diagrams. In order to use geometry, however, it is necessary that the problem be kept very simple; so simple, in fact, as to make the solution obvious to the informed. But, this method of presentation has an advantage of being more concrete and more readily understood than either words or mathematical notation can make it.

We can handle a very simple "two-dimensional" problem by graphic methods. Suppose we wanted to

**FIGURE 1. Graphic solution of a simple feed mix problem.**



**Dr. Robert F. Hutton**

**AUTHOR—The author of the accompanying article is a professor in the department of agricultural economics at Pennsylvania State University. He was reared on a farm in Kentucky and attended the University of Kentucky, earning a B.S. degree in general agriculture and an M.S. in agricultural economics. He obtained M.A. and Ph.D. degrees in economics at Harvard University. He was employed by the U.S. Department of Agriculture and the Tennessee Valley Authority before going to Penn State in 1954. A large part of his research has been on a project entitled "Minimum Cost Feeds for Domestic Animals." Dr. Hutton has been a leading worker in the field of linear programming and least-cost rations and, with associates, has had a number of articles in this field in the Journal of Farm Economics and other publications. He also was co-author of a recently published USDA report entitled "A Least-Cost Broiler Feed Formula." He teaches a course in the applications of linear programming to agricultural problems at the graduate level.**

formulate a feed that met the following two specifications:

(a) At least 1500 lb. of TDN per ton.

(b) At least 320 lb. of protein per ton.

We can plot this as point "X" in Figure 1. Through point "X" in Figure 1 we have constructed dashed lines parallel to both the TDN and the protein axes. These dashed lines divide the protein-TDN plane represented by Figure 1 into four areas. These areas have been descriptively labeled on the face of Figure 1. A minute's study of Figure 1 shows us that a mix that will have a combination of TDN and protein that will plot in or upon the boundaries of area "IV" will satisfy both of our mix specifications. Point "X" is the only point within the area defined that will result in both the specifications being exactly met. At all other points either TDN or protein or both are above the minimum. Our problem can be fully stated now. We want to find the ingredient or blend of ingredients that (a) will have a combination of TDN and protein that will plot on the boundary or within area "IV" and (b) will be lower in cost than any other ingredient or combination of ingredients.

The next step in solving our problem graphically is that of introducing the ingredients to be considered into the analysis. Moreover, we need to introduce them in value terms so that we can then select the least cost. A convenient way of doing this is to express each ingredient in terms of the pounds of TDN and protein that can be purchased for a given amount of money. Let us deal in terms of units of $10.

If we had an ingredient (we'll call it ingredient "A" in the following discussions) which contained 200 lb. of protein and 1600 lb. of TDN per ton and cost $50; then, for $10 we would be able to buy 40 lb. of protein and 320 lb. of TDN. This can be plotted upon our Fig. 1. The point "Z" represents this combination. This point "Z" tells us a lot about ingredient "A"; in fact, all we need to know about it in solving our problem. If we draw a straight line through the origin "O" and through point "Z", it will ultimately intersect the boundary between areas "II" and "IV". As we saw earlier, this would satisfy the two mix specifications but would not necessarily be least cost. It is clear that the point where the line representing ingredient "A" crosses the boundary between Area II and Area IV will be a solution to our problem since it has 2560 lb. of TDN and 320 lb. of protein.

### Computing Cost

To compute the cost of this solution graphically, we can lay off on line "A" segments equal to the distance from "O" to "Z". Since the distance "O" to "Z" represents $10 of outlay, so will all the other segments of equal length along line "A". The beads along line "A" mark off segments equal in length to "O-Z." (Ignore for the moment the bead between 70 and 80.) The bead labeled $80 falls exactly on the point where line "A" crosses the boundary between Area II and Area IV. Thus, the solution to our problem using only ingredient "A" would cost $80.

Now, we can represent as many ingredients as we desire to consider on the face of Figure 1. Any ingredient that has both TDN and protein will yield a solution to our problem. In order to hold confusion to a minimum, we have added only one more ingredient, "B", which we represent by the line "B". Ingredient "B" costs $100 and contains 440 lb. protein and 1400 lb. TDN per ton. The point which is plotted at 140 lb. of TDN and 44 lb. protein, represents the amount of TDN and protein, respectively, that can be bought in ingredient "B" for $10. The line representing this ingredient reaches Area IV of Figure 1 on the boundary between Areas III and IV. This point represents a solution to our problem. It has only the minimum level of TDN but a heavy excess of protein. Its cost is about $107.

As between ingredient "A" and "B", "A" is clearly the less costly source of our feed requirements. But, have we found the least-cost solution to our problem by considering only the ingredients alone? Obviously not. Some combination of "A" and "B" should meet our specifications at lower cost than either "A" or "B" alone. We can solve this combination graphically.

As background to the graphic solution, consider the dotted line connecting point "Z" to point "W" in Figure 1. This dotted line represents all of the possible combinations of TDN and protein that can be bought for $10 in ingredients "A" and "B" (including all of one and none of the other as a combination). A similar line could be drawn between the $20 point on line "A" and the $20 point on line "B". It would give all the possible combinations of TDN and protein that could be purchased for $20 in these two ingredients. In general, we could connect all points of equal value on the two lines with lines parallel to that connecting "Z" and "W". One such line is of particular importance to us since it passes through the point "X" and, therefore, represents a combination of "A" and "B" which contains the minimum level of protein and of TDN needed to solve our problem. This line intersects "A" and "B" at the $75 point on each. Thus, this solution to our problem will cost $75. Since this is less than either of the previous solutions and is the lowest possible cost for a combination of "A" and "B", it follows that this is the least-cost solution considering only "A" and "B".

We know that our least-cost solution will cost $75 and will exactly meet our specifications, but how much of "A" and how much of "B" will it contain? This information can be obtained from the graphic solution. The point "X" bisects the line connecting the $75 point on each of the lines "A" and "B". The total expenditure of $75 upon both "A" and "B" is divided between "A" and "B" in proportion to the length of the two segments on opposite sides of point "X". In the present case the segment between "X" and line "B" is exactly one half the length of the segment between "X" and line "A". Therefore, one third of the $75, or $25, will be spent upon "A" and two thirds of the $75, or $50, will be spent upon "B". (Note that this is, in a sense, inverted.) Since "A" costs $50 per ton, one half ton would be used in the combination; and, since "B" costs $100 per ton, one half ton would be used in the combination.

If we were to add a third ingredient to this graphic analysis, we would need to analyze the possible combinations of it with both "A" and with "B" in addition to considering it by itself as a solution. The same would be true of all other added ingredients. You can see that this would soon become cumbersome.

### General Characteristics

Thus, we will not carry the analysis further except to point out some general characteristics.

1. A combination of two ingredients needs to be considered only if the desired characteristics of the mix ("X" in Figure 1) lies within the angle between the two lines.

2. If the bead representing a particular value of an ingredient lies nearer to the origin "O" than all points on a line drawn from beads of the same value on the lines of two other ingredients, this ingredient may be ignored in further analysis since it will be more costly than a combination of the two ingredients.

3. No more than two ingredients will ever be employed in forming the least cost mix having two specifications. This statement can be generalized to all linear programming problems. There will never be more ingredients in a least-cost feed mix than there are specifications for the mix. This is an easy test to apply to your present formulas that requires no computations. If the number of ingredients being used in your mix is greater than the number of specifications for the mix you can safely bet its cost can be reduced. Of course, you must be careful to account for all the specifications, some of which are not obvious.

There are many other interesting illustrations of principles that could be attempted with the use of graphic analysis. If you are seriously interested in becoming expert in the application of programming, you probably will benefit from further reading in the references given to this section. We can't go into any more detail in this survey.

In passing you may care to note that all of the lines in Figures 1 and 2 are straight. This ties in very closely with the "linear" part of linear programming.

**RELATIONSHIPS OF PETERSEN'S COTTONSEED MEAL AND CORN CONSTANTS TO LINEAR PROGRAMMING** — Undoubtedly most of you have some acquaintance with the "cottonseed-corn" constants developed by Petersen and published by Morrison and others (3). They illustrate the concept of the "equivalent-combination" that plays an important role in linear programming. We could, if space permitted, demonstrate that the cottonseed-corn constants may be derived by graphic analysis similar to that used in the previous section. Petersen did not use the value measure but instead measured in physical quantity which were subsequently to be given a value by the user. Briefly, we could represent corn by a line comparable to "A" and cottonseed by a line comparable to line "B" in Figure 1. The ingredient for which the "cottonseed-corn" constant is desired could be represented by a point comparable to "X". A line would be drawn through "X" and connecting points of equal weight on the line "A" and "B". Point "X" would bisect the line in the appropriate proportions. No solutions other than those that reach area "IV" at "X" were considered by Petersen.

Another means of obtaining Petersen's "cottonseed-corn" constant is by solving a set of two simultaneous linear equations. In essence the problem is one very comparable to a feed mix problem. The specifications of the "mix" in this case are the protein and TDN content of the feed ingredient for which the "cottonseed-corn" constants are desired. Cottonseed and corn are the only two ingredients to be considered. This problem can be stated mathematically as two equations (one for protein and one for TDN) in two unknowns (one the level of cottonseed and the other the level of corn).

Note that this procedure differs from that of linear programming in two important respects. First, value was ignored and, second, the "specifications" must be exactly met. Our mathematical model of the problem had none of the inequations we included in our definition of linear programming. In Petersen's system TDN and protein in the cottonseed and corn exactly equal the TDN and protein in the ingredient being evaluated. All solutions that may give the exact amount of protein and a surplus of TDN are excluded as are all those that give the exact amount of TDN and a surplus of protein. These excluded solutions may be of economic importance, as we will demonstrate later, but if Petersen had admitted these solutions, Morrison would have had difficulty condensing the results into a manageable table.

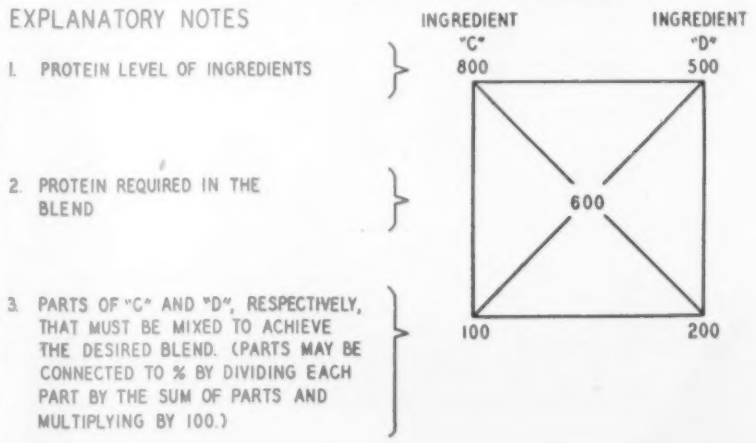
**RELATIONSHIP OF THE PEARSON SQUARE TO LINEAR PROGRAMMING** — Those of you who have had contact with dairy manufacturing have undoubtedly been introduced to a near cousin of linear programming—the "Pearson square" (4). The Pearson square is designed to deal with blending or mixing problems. For example, if you have milk of two different butterfat tests, one of which is below and the other above your standard, you can use the Pearson square to determine the proportion of each to use to reach your standard.

Figure 2 gives a Pearson square solution to a feed blending problem. The problem is one of selecting the proportions for two protein concentrates to yield a blend of an intermediate value. The level desired in the blend is entered in the center of the square. The level in ingredient "C" is entered above the upper left corner. The level in ingredient "D" is entered above the upper right corner. It is conventional to put the higher level on the left. At this point all the data of your problem are entered in appropriate fashion and calculation for a solution may begin. The calculation goes as follows: Subtract the desired level (recorded in the center of the square) from the level of ingredient "C" and record the difference below the lower right corner. Subtract the level of ingredient "D" from the desired level and

## USDA BULLETIN AVAILABLE

**A technical bulletin providing a mathematical pattern for developing a broiler feed mixture at lowest cost has been issued by the U.S. Department of Agriculture in cooperation with the Pennsylvania Agricultural Experiment Station. This bulletin was written by the author of the accompanying article and G. A. King and R. V. Boucher. Reference to this bulletin is made in succeeding articles in the Feedstuffs series by Dr. R. F. Hutton, and it is suggested that readers obtain a copy of the bulletin. This bulletin, "A Least-Cost Broiler Feed Formula," P.R.R. No. 20, is available without cost from the Office of Information, U.S. Department of Agriculture, Washington 25, D.C. Both the bulletin and the articles by Dr. Hutton will be of help to feed men interested in least-cost feed formulas and linear programming.**

**FIGURE 2. Use of Pearson square to solve a feed mix problem.**


EXPLANATORY NOTES
1. PROTEIN LEVEL OF INGREDIENTS
2. PROTEIN REQUIRED IN THE BLEND
3. PARTS OF "C" AND "D", RESPECTIVELY, THAT MUST BE MIXED TO ACHIEVE THE DESIRED BLEND. (PARTS MAY BE CONNECTED TO % BY DIVIDING EACH PART BY THE SUM OF PARTS AND MULTIPLYING BY 100.)
INGREDIENT "C"
INGREDIENT "D"
800
500
600
100
200

record the difference below the lower left corner. You now have your solution. If you blend the number of units of ingredient "C" indicated by the number under the lower left corner with the number of units of ingredient "D" indicated by the number under the lower right corner, the composite will have the desired level of protein.

This is the same kind of analysis involved in determining Petersen's "cottonseed-corn" constants. And, it suffers the same weaknesses. This can be demonstrated easily in the present case. Let's assume that you would prefer more protein to less in the blend. If ingredient "C" were lower in price per unit than ingredient "D", you would obviously use all of "C" and none of "D". The use of Pearson's square does not recognize this possible situation, and except for human judgement you would always have the same blend regardless of price. With linear programming we can go a step further and get the least cost solution as long as it at least meets minimum specifications. Moreover, it does this without interposition of human judgement. In this illustrative case this particular advantage of linear programming in operating without continuing human judgement is of small importance, but as the complexity of the problem increases, so does this advantage increase in importance.

**ALLIGATIONS AND LINEAR PROGRAMMING**—Probably few of you were taught "alligations" in grade school. If you were, you have a head start on the rest of us in understanding linear programming. This subject was apparently taught regularly in elementary schools around the early 1800's. Generally speaking it had all the features of linear programming except that of value weighting. It was essentially the same in terms of kind of problem handled as the previously discussed "cottonseed-corn" constants and the Pearson square; but, in addition, it recognized as solutions those combinations that exceeded some specifications. The mechanics of this procedure are very similar to that of the complete description method of linear programming to be discussed later; therefore, it will not be discussed further.

**THE "COMPLETE DESCRIPTION" METHOD OF SOLVING LINEAR PROGRAMMING PROBLEMS**—There is a method of solving linear programming problems that is known as the "complete description method" (5). It is practically worthless as a means of solving a miller's feed formulation problems. It yields all the feasible solutions to a programming problem without regard to their cost. It should be obvious that the description of the 34 trillion solutions to the 10 ingredient-six specification problem would be of little value even if obtained. It would take much longer to search through these solutions for the one of least cost than it would to solve the problem by more straightforward methods.

This method has the advantage, however, of being more obviously logical than some of the other methods used. For this reason we will spend some time illustrating the solution to the problem by this method.

Suppose we want a feed mix that has at least 75% TDN and at least 20% protein and that we are to formulate it from the following three ingredients:

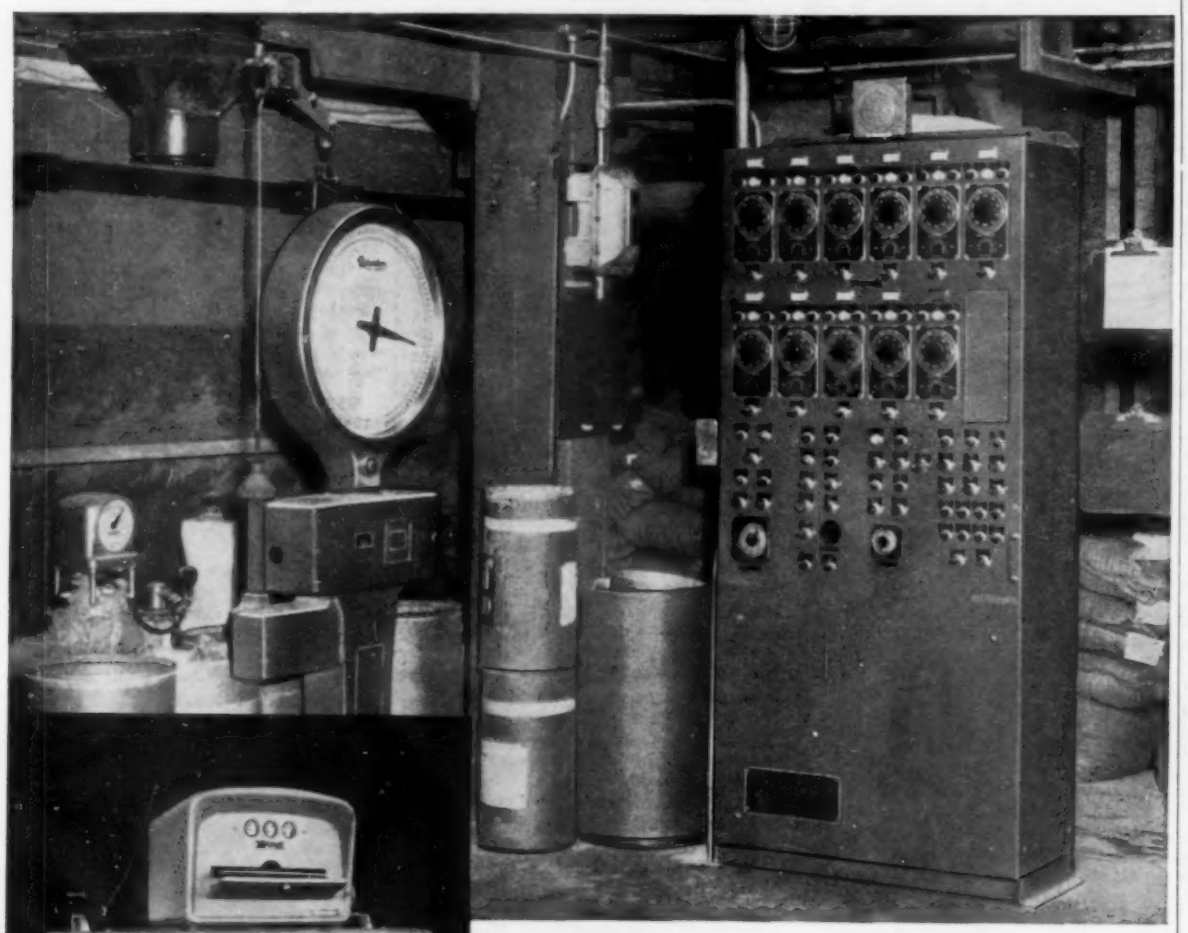
| Ingredient | Per cent TDN | Per cent protein |
|---|---|---|
| "A" | 78 | 25 |
| "B" | 72 | 13 |
| "C" | 73 | 10 |

We proceed in the complete description method first to find all of the feasible solutions to one specification; then, from among the solutions to the first specification, find all feasible solutions to the second specification. If there were more than two specifications, this process would be continued until all the solutions to all the specifications were developed.

In our illustrative problem, let us consider the solutions to the TDN specifications first. We want at least 75% TDN. Therefore, it is apparent that ingredient "A" alone is a solution to this specification. "B" and "C" alone, however, are not solutions. It would be possible to combine some "A" with some "B" and some of "A" with some of "C" to form solutions. Now, strictly speaking we could form an infinite number of such solutions varying from almost all "A" down to the minimum amount of "A" by infinitesimal steps. We can rule out all of these solutions except the ones that minimize the use of "A". The others would never be economical. Only if "A" were less expensive than either "B" or "C", would we ever want to go above minimum levels for "A" in the combinations. On the other hand, if "A" were less expensive, the solution consisting entirely of "A" would be less costly than any possible combination of "A" and either "B" or "C". Therefore, it follows that in combinations we want to develop only those solutions that minimize the use of the ingredient having an excess of the specified characteristic. Moreover, these will always be the solutions that exactly meet the specified characteristic.

Since this is the case, we can use either the graphic method, the Pearson square method or the method used in showing the Petersen "cottonseed-corn" constants in developing relevant solutions. Using the

(Turn to PROGRAMMING, page 95)

FOR AN EXTRA DIVIDEND
OF SERVICE
THE RICHARDSON CARD READER

- Allows formulas to be set up for entire day on prepunched cards.
- Eliminates time lost in changing to new formulas.
- Avoids human error in weight selections by being fully interlocked.

You get AUTOMATIC control
of all blending operations
with Richardson SELECT-O-WEIGH

A Richardson Select-O-Weigh will pay for itself in increased efficiency and trouble-free operation. It provides central-source control for any number of feeders and one or more hopper scales in the accurate proportioning of ingredients in a formula. Here are just some of the many advantages.

- Reduces cost per ton of feed.
- Increases production.
- Provides quality control through consistent batching.
- Can be changed from one formula to another at remote point by dialing weight selectors.
- Frees labor for other important functions.
- Controls mixing time and mixer discharge as well as feeders.

Select-O-Weigh panels are engineered for your particular needs. For further information, send for bulletin 0351. 4998

Richardson Scales conform to U. S. Weights and Measures H-44 for your protection.

Richardson
MATERIALS HANDLING BY WEIGHT SINCE 1902

RICHARDSON SCALE COMPANY, CLIFTON, NEW JERSEY
Sales and Service Branches in Principal Cities
Also Manufactured in Europe to U. S. Standards

Which grain dryer
is factory
assembled?

ARID-AIRE
. . . and you can
RENT IT!

Daycom, Inc.
Flour Exchange • Minneapolis 15

EACH WEEK FEED MEN
IN 46 FOREIGN COUNTRIES
Read . . .
FEEDSTUFFS

# SERVICE BULLETIN for members of the feed and poultry industries

## Replacement and Laying Flock Production Charts

| ANNUAL PULLET REPLACEMENT FIGURES | | |
|---|---|---|
| If percentage of hens lost through culling and mortality is: | In order to house this number of pullet replacements per 1000 chicks: | You will need to start this number of chicks: |
| 30 | 300 | 430 |
| 35 | 350 | 501 |
| 40 | 400 | 572 |
| 45 | 450 | 644 |
| 50 | 500 | 715 |
| 55 | 550 | 786 |
| 60 | 600 | 858 |
| 65 | 650 | 929 |
| 70 | 700 | 1,000 |
| 75 | 750 | 1,072 |
| 80 | 800 | 1,144 |
| 85 | 850 | 1,216 |
| 90 | 900 | 1,287 |
| 95 | 950 | 1,359 |
| 100 | 1,000 | 1,430 |
| 110 | 1,100 | 1,573 |
| 120 | 1,200 | 1,716 |

**NOTE:** If straight-run chicks are used, double the figures in the right hand column. If the incidence of mortality is lower than expected, surplus pullets may be sold off as ready-to-lay pullets, or dressed out. Some poultrymen will profit from the housing of extra pullets in temporary quarters. These may be used as a reserve to replace any birds lost as a result of early mortality or culling during the first few months of production.

| DAILY FEED CONSUMPTION TABLE (per 100 layers) | | |
|---|---|---|
| Percentage of Birds in Production | Total Daily Feed Consumption | |
| | Heavy Breeds | Leghorns |
| 50 | 28-29 lb. | 24-25 lb. |
| 60 | 29-30 lb. | 25-26 lb. |
| 70 | 30-31 lb. | 26-27 lb. |
| 80 | 31-32 lb. | 27-28 lb. |

| COMPARISON OF LAYER WEIGHT AND FEED CONSUMPTION | | | |
|---|---|---|---|
| Hen Weight (Lb.) | Maintenance Only (Lb.) | Feed Maintenance and 250 Eggs (Lb.) | Per Dozen Eggs (Lb.) |
| 3.5 | 52 | 88.0 | 4.2 |
| 4.0 | 57 | 92.0 | 4.4 |
| 4.5 | 61 | 96.5 | 4.6 |
| 5.0 | 65 | 101.0 | 4.8 |
| 5.5 | 70 | 105.0 | 5.0 |
| 6.0 | 74 | 109.0 | 5.2 |

**NOTE:** A 4 lb. hen will consume approximately 57 lb. of feed per year, for maintenance purposes only. Heavy hens consume an additional 8 or 9 lb. of feed for each extra lb. of weight. Beyond the requirements for basic body needs, each dozen eggs is produced on 1⅔ lb. of feed, regardless of body weight or rate of lay.

| FEED CONSUMED PER DOZEN EGGS | | |
|---|---|---|
| No. of Eggs per Year | Total Feed Consumed (Approximate) | Lb. of Feed per Dozen Eggs |
| 120 | 75 lb. | 7.5 |
| 160 | 80 lb. | 6.0 |
| 200 | 86 lb. | 5.2 |
| 250 | 93 lb. | 4.5 |

*Prepared for members of the feed and poultry industries in the interests of better poultry health and nutrition. Copies of this and others in the series of Service Bulletins are available on request. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.*

© MERCK & CO., INC.

# Double Check

## Critical B Vitamin Levels in your

# LAYING RATIONS

Compare the recommended levels of B vitamins at right with those you are formulating in your layer feeds. If your feeds look low on essential B vitamins consider this fact: consumption of high-energy, low-vitamin feedstuffs like corn and fats results in lower feed intake. This means that your high-energy feeds must have more nutrients per pound of ration to support maximum egg production.

It's obviously to your benefit to check the B vitamin levels of your layer rations every time you change ingredients, suppliers or increase caloric content. Then, to assure yourself of trustworthy supplemental vitamin levels, specify Merck Vitamin Mixtures and be confident that every beakful of your feed contains the adequate vitamin content you planned.

| Vitamin | Total recommended levels (Gm./ton) Layer | Breeder |
|---|---|---|
| **Riboflavin** | **4** | **5** |
| **Calcium Pantothenate** | **12** | **14** |
| **Niacin** | **25** | **25** |
| **Choline Chloride** | **1000** | **1200** |
| **Vitamin $B_{12}$** | **3.0** (mg./ton) | **6** (mg./ton) |

### ASK THE MERCK MAN

With the exciting advances in animal health and nutrition continuing at an ever-increasing pace, it really pays to keep in touch with your Merck Man. Since most of these advances revolve around microingredients like amino acids, coccidiostats, antibiotics, and vitamins, it is obvious you will benefit by being close to a specialist in both therapeutic and nutritional microingredients.

Your Merck Man not only brings you the great fundamental discoveries of Merck research, but he helps acquaint you with practical and developmental improvements such as water-dispersible supplements. During the past ten years Merck research teams and technical service staff have come up with Vitamin $B_{12}$, NiCarb®, S.Q.®, and the use of Procaine Penicillin in feeds. This proved history of success forecasts beyond question of doubt that new developments from Merck research are coming soon.

*Merck Sales offices in Atlanta, Boston, Chicago, Dallas, Kansas City, Los Angeles, Minneapolis, New York, Philadelphia, St. Louis and San Francisco.*

Merck & Co., Inc., *Chemical Division*, Rahway, N. J.

MERCK

**VITAMIN MIXTURES AND VITAMINS**

**WITH THE MERCK MARGIN OF SURETY**

## PENB Promotion Results "Extensive" At Half-Way Point

CHICAGO—Results of the Poultry & Egg National Board's three-pronged campaign for broilers were announced here recently by William A. Staempfli, Jr., director of PENB's division of broiler promotion, as the year's campaign passed its half-way mark.

Mr. Staempfli cited "extensive results" in the three basic areas which form the backbone of PENB's broiler-fryer promotion: (1) Food publicity to all media, (2) special projects and events, and (3) tie-in promotions.

He said, "PENB's 1958 broiler division campaign has been geared to exploiting the unique characteristics of chicken as a basic food, stressing nutritional advantages, flavor and eye-appeal. We feel that such an approach builds a truly long-range consumer franchise for chicken, and makes for steady demand through all marketing conditions."

Toward achieving these results, Mr. Staempfli outlined activities already accomplished under the program which wound up its first six months June 30, and reached a climax with the "Anniversary Fair" held in New York City. This broiler event brought together representatives from 29 national magazines, 10 national feature syndicates, 11 major radio and television stations, 21 newspapers, American Weekly and Parade supplements and other publications.

PENB food publicity efforts proceed around the calendar, Mr. Staempfli said, with a promotion geared to every month. Typical broiler publicity pieces reached an estimated 70 million persons.

Special projects and events are another major area of the broiler campaign. Included are the Annual Poultryland Fair, National Chicken Cooking Contest and such projects as contacts with authors and publishers of cookbooks, school projects, institution and restaurant projects and a professional project for the dissemination of technical information on the nutritional value of chicken to physicians, dieticians and other professional persons in related fields.

Tie-in promotions and coordinated efforts with other promotional groups constitute the third major activity under PENB's expanded broiler division program. Several of these activities were also reported for the first half of the year.

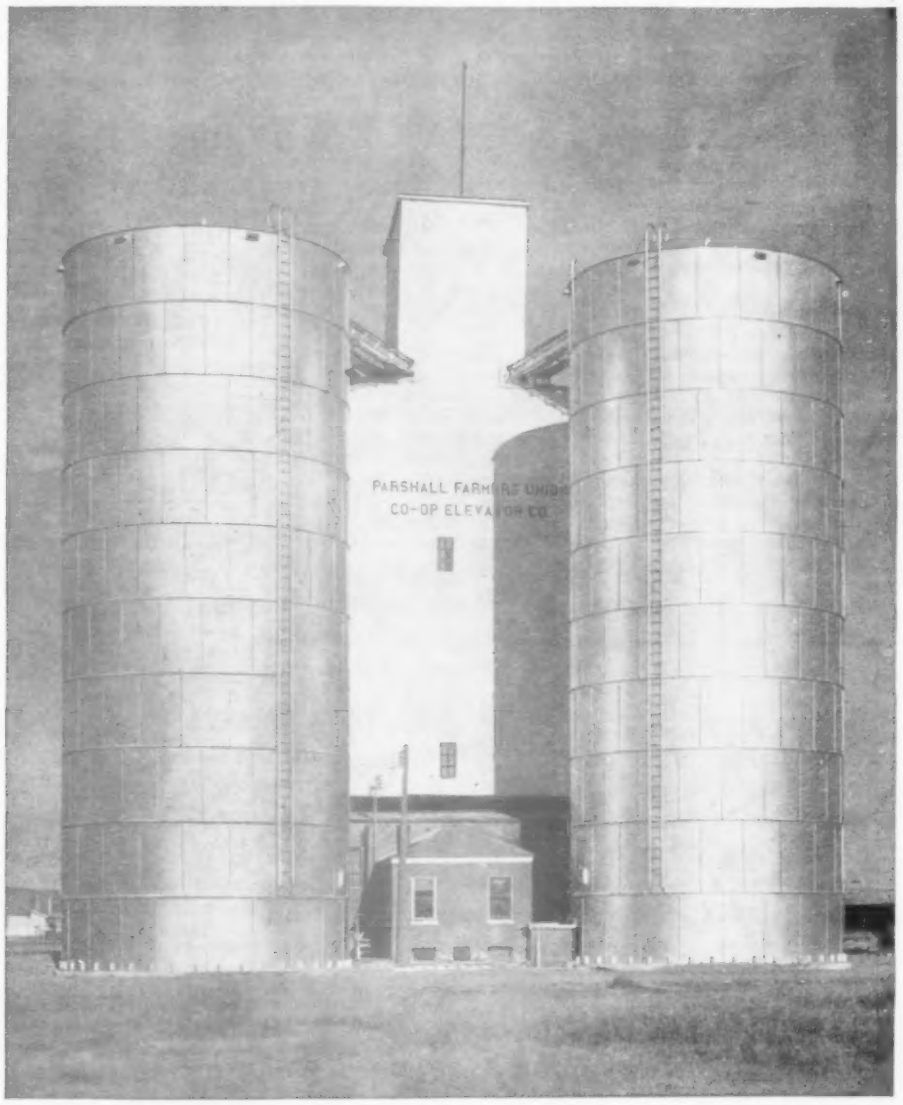
### INSPECTION OFFICE MOVES

LOS ANGELES—The Los Angeles inspection office of the Bureau of Field Crops has been moved to 972 S. Goodrich Blvd., Los Angeles 22, according to an announcement from the Bureau. The new telephone number is PArkview 1-5151.


How your nearby Butler contractor can

**cut your storage costs**

with Butler steel tanks




Big tanks make good economic sense at the Parshall Farmers' Union Co-op Elevator Co., Parshall, North Dakota. These 32 x 80-ft. Butler bolted steel tanks provide both safe storage and easy grain handling at a low per bushel cost. Jacobsen, Incorporated erected this attractive installation.

Meet Ruvold Jacobsen of Jacobsen, Incorporated, Williston, N. D. He's typical of Butler contractors all over the country who are local experts in building Butler steel tank storage facilities.

Your Butler contractor knows the special construction problems, infestation problems and weather conditions in your area—and how to solve them with weather-tight, rodent-proof Butler steel tanks. He'll help you get all of the other benefits of Butler steel tanks, too—low initial cost, low insurance rates, minimum maintenance, excellent fire and weather protection, easy cleaning and fumigating. And, of course, Butler's speedy erection.

Butler bolted steel tanks are also widely used for bulk storage of feed and ingredients. Capacities range from 1,297 bushels to 123,364 bushels.

For complete handling of your storage problems by a man who can give you service that cuts costs, contact your nearby Butler contractor or write us direct.

BUTLER STEEL PRODUCTS

**BUTLER MANUFACTURING COMPANY**

Dept. 402, 1020 East 63rd Street, P. O. Box 7027, Kansas City 13, Missouri
902 Sixth Avenue, S.E., Minneapolis 14, Minnesota
1012 Avenue W, Ensley, Birmingham 8, Alabama
Dept. 2, South 27th St. and Butler Ave., Richmond 1, California

Manufacturers of Equipment for Farming, Dry Cleaning, Oil Production and Transportation, Outdoor Advertising • Metal Buildings • Custom Fabrication
Factories at Kansas City, Mo. • Minneapolis, Minn. • Galesburg, Ill. • Richmond, Calif. • Birmingham, Ala. • Houston, Texas • Burlington, Ontario, Canada

# Energy Restriction for Replacement Pullets

**By Dr. H. W. Bruins**
**Research Department**
**The Quaker Oats Co.**

In 1937 Dr. O. B. Kent initiated work on a program of restricting the feed intake for replacement pullets. He observed that pullets which were less than full fed were delayed in the onset of egg production, eggs were larger at the onset of egg production, and pullets so reared showed a higher survival rate in the laying house than did their full fed sisters.

McCay (1-3) showed that reducing the energy intake of rats markedly increased their life span. Later Visscher (4-7) made similar findings with the mouse. He found that female mice maintained on caloric restriction for eight months and then full fed became as fertile as normal young mice at a time when full fed littermate sisters were practically sterile due to senescence. Visscher also noted that mammary tumors were virtually non-existent in restricted female mice.

In 1954, we became interested in reexamining the question of feed restriction for growing replacement pullets. Although we had had 15 years of field experience with such a program at that time, little controlled experimental data was available.

At that time our restricted feeding program in most common use was based on the use of a growing mash along with liberal quantities of whole oats. We had observed that many commercial poultrymen were unable to follow such a program because of inexperienced labor, insufficient equipment, etc. It occurred to us that if it were possible to accomplish the same goal by full feeding a special feed designed to limit energy consumption, we might be able to solve this problem for the commercial poultrymen.

We thought perhaps we might approach the problem in the same way a doctor might prescribe weight reduction diets for some people. Instead of having a person cut down on his total consumption, let him eat all he wants, as long as it is thin soups, salads and green vegetables. Why not make a soup and salad diet for chickens?

In 1954, Hill (8-9) had reported some work which demonstrates the fundamental principle involved in this consideration, and I think it might be well to review his findings briefly.

In Figure 1, data from Hill's paper has been plotted showing that feed consumption is inversely related to the energy content of the diet. As energy content is reduced—in this case by adding oat hulls—feed consumption increases. However, this relationship is not exactly proportional. The dotted line in the figure shows the slope which would be expected if the chicken consumed exactly the same amount of energy at all levels of energy in the diet.

In Figure 2 the total amount of energy consumed at the various dietary energy levels is plotted. Note that only ⅔ as much energy is consumed when the diet contains 500 calories per pound as when it contains 975.

Surprisingly, Hill found essentially the same growth rate from 0 to 11 weeks at all energy levels. Therefore, it appeared that the number of calories required per unit of gain was decreased on the lower energy diets.

Hill offered two explanations for this apparent improvement in caloric utilization. First, he showed a considerable change in the body composition of the birds fed the different energy levels. (Table 1) In spite of the fact that all energy levels produced essentially the same weight of bird, the birds on the lower energy level deposited only 60% as much fat as did the birds fed the higher energy level.

Second, in a subsequent paper, it was shown that the birds fed diets containing 30% oat hulls had lower basal metabolic rates than birds fed the higher energy diets. (Table 2) This is consistent with work on other species, including humans, under conditions of partial inanition.

This work prompted us to compare the effect of low energy, high fiber diets for the growing pullet as a means of reducing energy intake with conventional restriction of total feed intake, and to determine whether pullets so reared would have the same desirable qualities in the laying house.

In the past four years we have conducted about a half dozen experiments involving several thousand birds on this question. Last year we made some carefully controlled field tests of the program in various sections of the country involving about 10,000 broiler breeder type birds and a similar number of light breeds. I will review only two of these experiments briefly; however, the results of these are representative of our findings.

**EXPERIMENT 1:** The first experiment which was conducted in a small commercial cage farm near Ana-

**Figure 1**

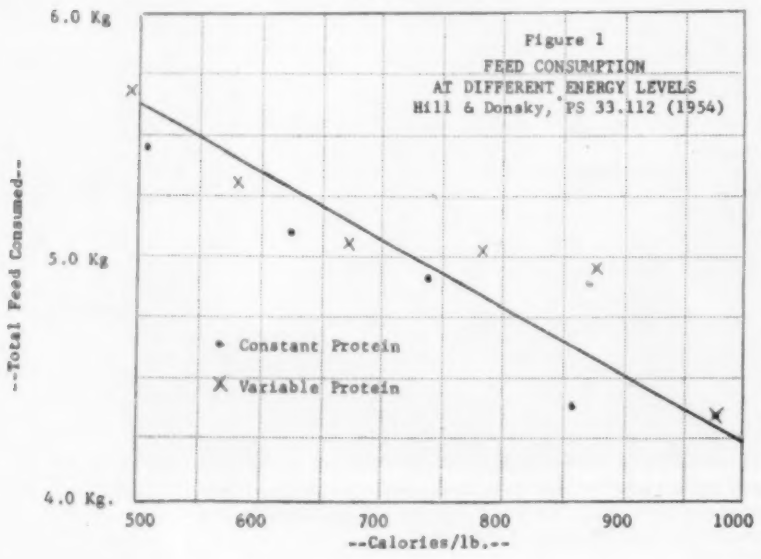



**Figure 2**

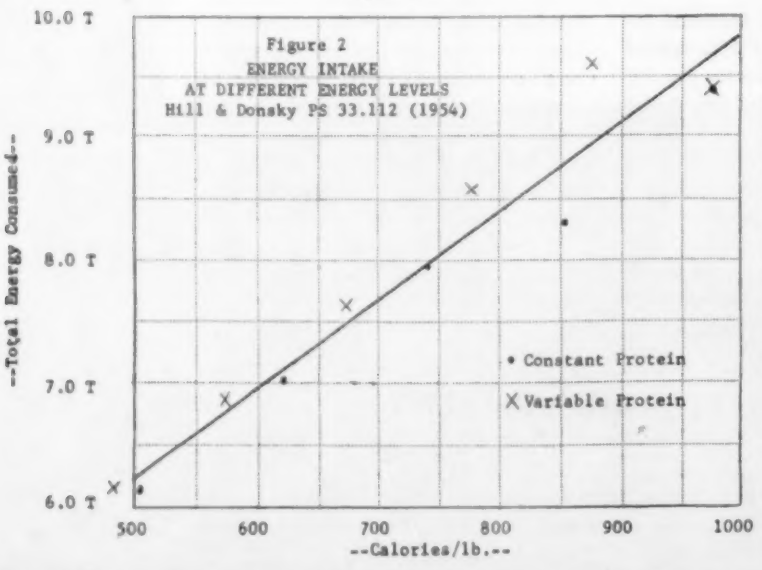



**TABLE 1. Effect of Dietary Energy on Carcass Fat Content**
(Hill & Dansky, PS 33:112; 1954)

| Diet | Dietary productive energy | Carcass fat % of dry wt. |
|---|---|---|
| Control | 975 | 26.8 |
| 10% Oat Hulls | 858 | 23.2 |
| 20% Oat Hulls | 741 | 21.1 |
| 30% Oat Hulls | 623 | 18.1 |
| 40% Oat Hulls | 505 | 16.1 |

**TABLE 2. Basal Metabolic Rate of Birds Fed Different Energy Levels**
(Mellon, Hill & Dukes, PS 33:791; 1954)

| Diet | Males Age (wk.) | Males Weight (gm.) | Males $O_2$ (adj.) (L/bird/hr.) | Females Age (wk.) | Females Weight (gm.) | Females $O_2$ (adj.) (L/bird/hr.) |
|---|---|---|---|---|---|---|
| E-2 | 5-6 | 528 | 0.627 | 9-10 | 1069 | 0.964 |
| 30% Hulls | 5-6 | 555 | 0.563 | 9-10 | 1099 | 0.881 |
| E-2 | 14-17 | 2303 | 1.533 | 19-22 | 2212 | 1.192 |
| 30% Hulls | 14-17 | 2268 | 1.484 | 19-22 | 2071 | 1.084 |

**TABLE 3. Pullet Weights at 20 Weeks**
Experiment 1—Anaheim

| Hatch date | Full fed (lb.) | Restricted | CG1 | CG2 |
|---|---|---|---|---|
| | | (Difference from full fed, lb.) | | |
| 9/30/54 | 3.80 | —1.04 | —0.76 | —0.48 |
| 1/17/55 | 3.01 | —0.18 | +0.04 | —0.16 |
| 3/24/55 | 3.22 | —0.60 | —0.23 | —0.09 |
| 7/22/55 | 2.93 | —0.15 | +0.11 | —0.09 |
| Average | 3.24 | —0.49 | —0.21 | —0.20 |

**TABLE 4. Feed Intake to 20 Weeks**
Experiment 1—Anaheim

| | Full fed | Restricted | CG1 | CG2 |
|---|---|---|---|---|
| Lb./C/d | | | | |
| 7-15 weeks | 20.8 | 14.2 | 28.8 | 27.3 |
| 16-20 weeks | 25.2 | 16.7 | 34.3 | 32.5 |
| Total feed to 20 weeks | 24.5 | 17.8 | 33.0 | 30.5 |
| Caloric intake, % of full fed | | | | |
| 7-15 weeks | 100% | 69% | 90% | 87% |
| 16-20 weeks | 100% | 67% | 88% | 86% |

# *Low Energy Formulas for Flock Replacements*

**Reports and Comments by College and Industry Poultry Scientists**

One of the current topics of interest to poultry nutritionists and feed men is the question of energy restriction in feeding replacement pullets. Low energy feed formulas for flock replacement birds were the subject of a panel discussion at the 1958 convention of the Association of Southern Feed and Fertilizer Control Officials in Atlanta.

Industry and college nutritionists presented research data and comments showing benefits of energy restriction in feeding replacement pullets. The discussion covered both laying strain replacement stock and broiler-type birds.

In charge of the panel was Dr. J. R. Couch of Texas A&M College System, College Station, Texas. The accompanying article is the text of the paper presented by Dr. H. W. Bruins of the research department of the Quaker Oats Co. Following are summaries of some of the discussions and other talks:

**COMMENTS FOLLOWING DR. BRUINS' TALK (Answers by Dr. Bruins to some of the questions):** We have used 15 to 20% fiber in the low energy feed. I would not quarrel with anyone who said it should be 15% fiber or another who said it should be 20% fiber or someone else who said it should be 25% fiber. I am convinced that it must be over 12 or 14% fiber before you get any substantial amount of energy restriction.

We have used both pellets and mash. Where we are using a meal, we feel we need a little higher energy type of diet than when we use pellets or crumbles. From a biological point of view we should prefer to put it in meal form because birds would not eat so much of it and our economy would be better. But this is unsatisfactory because of the appearance of the feed. No one would buy it. In addition, it would blow badly in the wind.

We have tried to maintain in the high fiber diets about the same fortification we have in our conventional growing rations. We got about twice the consumption we do on restriction and so we are getting a higher nutrient intake, but we have not done enough work to know how low we can go in the various elements.

(The following was in answer to a question on feed consumption of the adult birds.) Feed consumption in the period from 24 to 36 weeks was almost identical in the low fiber, full fed birds, the high fiber, full fed,

(Turn to **FORMULAS**, page 35)

heim, Cal., was designed to compare four treatments for growing pullets:

1. Full feeding of a conventional all mash growing ration.

2. Restriction of the same diet to about ⅔ of the intake of the full fed group.

3. CG-1: Full feeding of a ration containing 40% oat mill feed with protein level maintained the same as the conventional growing ration, 15%.

4. CG-2: Similar to CG-1 but with 10.5% protein.

Four groups of Leghorn and hybrid pullets hatched at approximately three month intervals were used to test these treatments. The treatments were begun at 7-8 weeks of age and continued until 20-21 weeks. The birds were housed in conventional growing cages with 5-6 birds in each cage. At the end of the growing period, the pullets were moved at random into laying cages in seven laying houses and fed various experimental complete laying feeds. Individual production records were maintained and served as a guide for culling. In general, the culling practice was typical of the Southern California area, culling birds as they fell below 50% production — tempered somewhat by the surplus or scarcity of more pullets to fill the empty cages. The production records of the original growing treatments were then compiled and analyzed statistically.

Table 3 provides the general outline of the experiment with the four treatments replicated across four hatches of pullets. About 150 birds were used in each treatment in the first and third hatches and 75 birds per treatment in the other two hatches. This table also lists the average weights of pullets fed the various treatments at 20 weeks of age. Restriction of feed intake caused a substantial reduction in average weight of pullets below the full fed controls while the high fiber feeds were intermediate in this respect. Less weight reduction was noted in the energy restricted groups during warm weather.

Table 4 is a summary of the feed consumption data averaged for all four trials. Confirming Hill's work, these data show that feed consumption of the low energy, high fiber diets was increased about ⅓ over the control. However, energy intake of the groups was 10-15% less than the full fed control. Restriction of feed intake reduced feed consumption to 20 weeks by about 7 lb. in these trials.

### Heat Wave

Fortuitously, a severe heat wave of three days' duration which struck Southern California in the fall of 1955 gave us the opportunity to observe differences in susceptibility to heat prostration among birds of the various treatments. Temperatures rose to 105-110° for three days, Sept. 1-3. Mortality among poultry in Orange County was estimated at 20% in the period. One ranch only a couple of miles from our ranch suffered a loss of 55,000 of 72,000 birds. At the time of the heat wave, three hatches of birds had completed their growing period and were assorted randomly through the laying cages. All were being full fed at the time. (Table 5) The oldest group had been in production about five months; the second group had been in production two months and were in peak production; the third group, two breeds represented, was just beginning to lay and had completed the growing period only a week prior. The data show that substantially more of the full fed birds died from heat prostration than any of the energy restricted groups in the younger.

In the table I have averaged the results from all hatches of birds. It is apparent that there was little difference in losses due to heat among the oldest group. However, among the two younger groups 4-5 times as many full fed pullets died than among the various energy restricted birds. It was a little surprising to

# Liquid way to beef-up cattle
## -and your profits!

**Revolutionary new MOREA® liquid feed is science's answer to the search for a roughage supplement that makes more meat and milk at low feed and labor costs! And it's your opportunity for bigger, more profitable, year-round feed sales!**

**All you do** is combine concentrated MOREA pre-mix with molasses—and you have a high-quality, high-protein-equivalent feed for cattle and sheep! You can handle a large volume of production, delivery and sales with little labor. The only equipment needed is a pump, storage and mixing tanks . . . and tank trucks for delivery to customers!

**MOREA** *liquid feed is a balanced combination of urea nitrogen, ethanol, phosphoric acid, essential trace minerals and molasses, for "free-choice" feeding to cattle or sheep—along with plenty of roughage and water, and some grain and minerals.* MOREA *liquid feed produces more and better quality milk and meat at lower cost. It is as good for livestock on the range as for feeder animals or dairy cows. It's the only feed supplement containing ethanol, the "hydrogen donor" that helps ruminants make better use of roughage, grain and dietary nitrogen.*

**You'll find** MOREA liquid feed easy to mix and handle—even in cold weather. Get all the facts on this better, more profitable feed for cattle and sheep. Write today—mixer-distributorships are still available in certain areas!

**U. S. Industrial Chemicals Co.,** Division of National Distillers and Chemical Corp., New York 16, N. Y.
**Feed Service Corporation,** Crete, Nebraska

MOREA is a registered trade-mark of Feed Service Corporation.

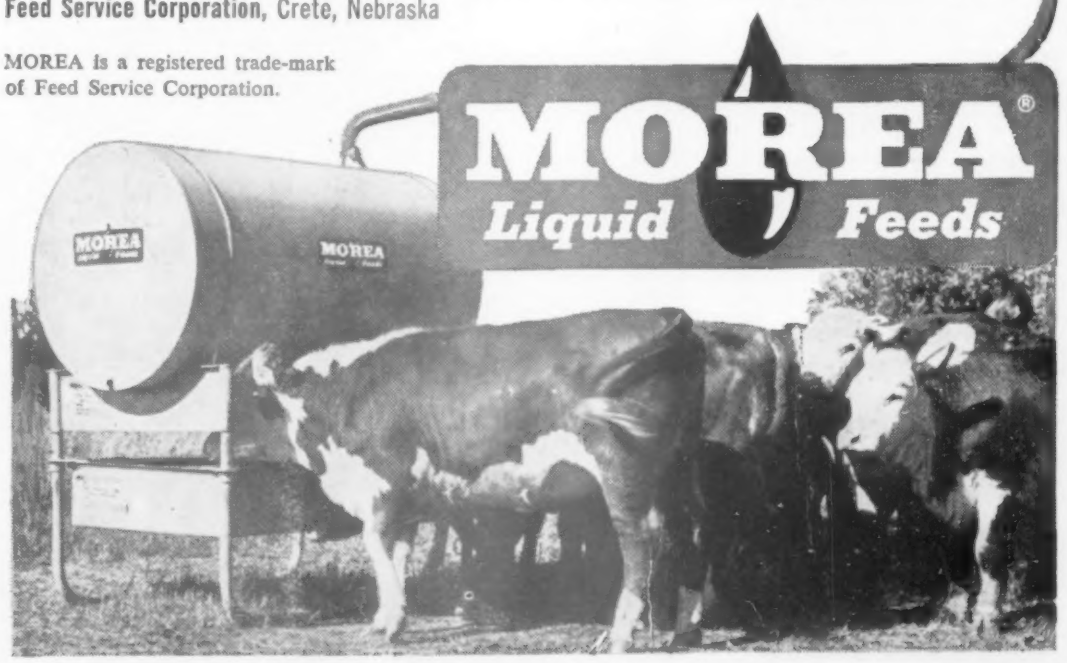


**TABLE 5. Mortality From Heat Prostration**
Experiment I—Anaheim

| Age at exposure | Full fed | Restricted | CG1 | CG2 | Hatch average |
|---|---|---|---|---|---|
| | | —(% loss of birds exposed)— | | | |
| 11 months | 7.8 | 11.9 | 7.1 | 2.6 | 7.2 |
| 8 months | 22.2 | 3.9 | 8.4 | 9.9 | 11.0 |
| 5 months, Kimber | 12.7 | 3.1 | 3.2 | 1.8 | 5.3 |
| 5 months, Jackson | 7.4 | 0 | 1.1 | 0 | 2.1 |
| Treatment average | 11.8 | 5.4 | 4.9 | 3.3 | |

**TABLE 6. Production Data**
Experiment I—Anaheim

| | Full fed | Restricted | CG1 | CG2 | Treatment F |
|---|---|---|---|---|---|
| Age at first egg, days | 172 | 178 | 175 | 175 | 5.80* |
| Days in production | 304 | 349 | 306 | 342 | 4.76** |
| Adjusted | (334) | (356) | (315) | (351) | |
| Eggs per hen housed | 186 | 216 | 192 | 213 | 5.12** |
| Adjusted | (204) | (221) | (198) | (218) | |
| Rate of production hen day, %.. | 61.0 | 62.1 | 63.0 | 62.1 | |

find that birds fed the high fiber diets reacted similarly to the birds restricted in feed intake in spite of the fact that they are not as severely restricted in energy consumption.

### Production Data

Table 6 summarizes the production data from these trials. It will be noted that the full fed groups in these trials had a relatively high average age at first egg of 172 days. They were not "forced" into production early. Restriction delayed production only six days in these experiments. It will be pointed out in later trials to be reported that egg production can be delayed longer if restriction is continued beyond 20 weeks of age, but if birds are allowed full feed at this age, relatively little delay is seen. Our data do not resolve the question as to whether or not delay in age of first egg is the important point in securing the advantage of restriction or whether it is simply "restriction during the growing period" per se that has the beneficial effect. The high fiber feeds delayed production only very slightly. In spite of the rather small differences you will note from the (F) value that these differences were statistically significant.

Under the conditions of these experiments, both restriction and the CG-2 high fiber-low protein full fed diet increased the length of productive life of these pullets. These differences were highly significant. Inasmuch as the differences were influenced by the heavy losses due to heat, the data have been adjusted to exclude those birds lost in the heat wave. The adjusted figures are shown in parentheses. Although this adjustment reduces the differences between treatments, the differences are still statistically significant.

A similar picture is shown in eggs per hen housed. Note that the restricted group and the group fed the high fiber-low protein diet produced about 10% more eggs than the full fed controls. Again, adjusting the data for heat losses, the differences are reduced but are still statistically significant.

It is important to note the diet CG-1, the high protein-low energy diet, failed to give the same response in length of production life and eggs per hen housed as did the restricted group and CG-2. This might be explained by work of Schneider (10) at Purdue who found that over-consumption of protein during the growing period produced excessive laying house mortality from a syndrome which they called gout. This points up the fact that the protein-caloric ratio is undoubtedly just as important in these low energy diets for replacement pullets as it is in high energy diets for broilers.

**EXPERIMENT 2 (Table 7):** The next experiment I would like to discuss briefly was conducted at our Libertyville Poultry Research Farm with birds on range. In this trial we fed two different levels of oat mill feed and in addition used straw, alfalfa and a residue from furfural production as diluents.

Again you will note that the restricted birds were considerably lighter than the full fed controls and that the high fiber-full fed birds were intermediate in this respect. After six months of production, the full fed group was still slightly heavier than the other groups but this difference was not statistically significant.

Since we were unable to trapnest these birds until 28 weeks of age, I have listed the rate of production at 23 weeks as an indication of sexual maturity. Of course the full fed group came into production most rapidly and the restricted group most slowly with the various high fiber groups intermediate.

Notice that those diets containing 37.5% oat mill feed were much heavier and came into production before the groups fed other diluents. We had calculated that these diets would supply about the same amount of energy, assuming that the diluents other than alfalfa would contribute no energy. However, in this trial and in subsequent experiments it became apparent that oat mill feed was indeed contributing some energy. Since in this trial the birds fed 52.5% oat mill feed responded similarly to those fed 37.5% of the other diluents, we were able to obtain a rough estimate of the energy content of oat mill feed. We calculated that oat mill feed must have supplied 170 calories per pound to have given this result. If this estimate proves to be correct, oat mill feed would be in about the


HONEGGER DEALERS
PROFIT from the
BIG FRANCHISE

BIG 4

Franchises available in some areas
WRITE, WIRE or PHONE
Honeggers' & Co., Inc.
Fairbury, Illinois

FEED
CHIX
FARM BUILDINGS
EQUIPMENT

most farmers
IN 47 OF THE 50 TOP
HOG PRODUCING COUNTIES
prefer
RED
...The Only
Fence Line That
Sells on Sight

same energy classification as alfalfa meal.

Although there were minor differences among the various high fiber-low energy diets in this trial, these differences were not statistically significant. All were significantly superior to the full fed control for the eight-month trapping period.

In other trials we have also tested a number of other fiber sources—including cottonseed hulls, rice hulls, peanut husks, corn cobs and sawdust. In a broad sense, all have been satisfactory for this use although oat mill feed appears to have some advantages.

More work is necessary on these alternate sources to determine if these minor differences are in fact real ones.

**SUMMARY:** In summarizing I would like to show you what these results mean in terms of dollars and cents. (Table 8) Using the data from the Anaheim experiment we have calculated the approximate costs of rearing a pullet on the three types of growing programs—full feeding a conventional growing ration, restricting the same feed and our new high fiber-low energy diet which we call "Pullet Developer." Of course, restricting feed will still produce the cheapest pullet. However, in spite of the increased feed consumption on the high fiber feed, with the reduced formula cost we are able to produce a pullet competitively with the more conventionally full fed bird.

In this summary, I have charged a food cost of a cent per day for the time that the pullets were in lay. On this basis you can see that by restriction a poultryman can increase his return over feed cost by nearly 90¢ per bird. With Pullet Developer he can increase his return by about 65¢ over conventional full feeding programs. Well then—why not recommend restriction and be done with it? Simply because under today's conditions of rearing, too many poultrymen cannot or will not restrict feed. So while it costs more money than restriction, it is a more convenient program and one that any poultryman can apply. Or let's look at it another way. If he cannot or will not restrict, with this program his cost of producing pullets will be at least competitive with conventional feeds and he has in addition the various benefits of increased egg production, improved livability, resistance to heat, etc.

The data presented show that high fiber-low energy diets for pullets will: (1) reduce energy consumption during the growing period; (2) increase slightly the age of sexual maturity; (3) improve the survival of pullets exposed to extreme heat; (4) improve laying house livability and (5) increase total egg production.

**TABLE 7**

Experiment 2—Libertyville Range

| Description of treatment | Feed intake 7-20 wk. | Average weight 20 wk. | Average weight 50 wk. | Rate of prod. at 23 wk. | Hen housed prod. 28-40 wk. | Adult mortality |
|---|---|---|---|---|---|---|
| Control—743 cal./lb., 15% protein | 20.8 | 4.47 | 5.8 | 50.2 | 116 | 28% |
| Same but restricted | 15.5 | 3.14 | 5.6 | ... | 140 | 13% |
| 37.5% oat millfeed, 10.5% protein | 26.5 | 4.04 | 5.6 | 38.3 | 142 | 12% |
| 52.5% oat millfeed, 8.0% protein | 32.1 | 3.60 | 5.4 | 5.7 | 133 | 16% |
| 37.5% oat millfeed, 15% protein | 29.4 | 3.92 | 5.5 | 24.7 | 142 | 20% |
| 37.5% furameal, 10.5% protein | 27.1 | 3.41 | 5.3 | 3.5 | 128 | 27% |
| 37.5% straw, 10.5% protein | 29.2 | 3.55 | 5.5 | 3.8 | 140 | 20% |
| 40% alfalfa, 13.5% protein | 28.6 | 3.56 | 5.6 | 5.0 | 135 | 18% |

**TABLE 8. Economic Aspects of Energy Restriction**

| | Full fed | Restricted | Pullet developer |
|---|---|---|---|
| Feed costs— | | | |
| Growing period | $0.98 | $0.71 | $0.92 |
| Laying period | 3.04 | 3.48 | 3.40 |
| Total | $4.02 | $4.19 | $4.32 |
| Gross return @ 42c doz. | 5.58 | 6.48 | 6.39 |
| Net return over feed | $2.49 | $3.37 | $3.14 |


**REFERENCES**

1. McCay, C. M., Crowell, M. F., and Maynard, L. A.—J. of Nutrition, 10:63 (1935).
2. McCay, C. M., Maynard, L. A., Sperling, G., and Barnes, L. L.—J. of Nutrition, 18:1 (1939).
3. McCay, C. M., Sperling, G., and Barnes, L. L.—Arch. Biochem., 2:469 (1943).
4. Ball, Z. B., Huseby, R. H., and Visscher, M. B.—Cancer Res., 3:131 (1943).
5. Huseby, R. H., Ball, Z. B., and Visscher, M. B.—Cancer Res., 5:40 (1945).
6. Ball, Z. B., Barnes, R. H., and Visscher, M. B.—Am. J. of Physiology, 150-511 (1947).
7. Visscher, M. B., King, J. T., and Chiung Puh Lee, Y.—Am. J. of Physiology, 170:72 (1952).
8. Hill, F. W., and Dansky, L. M.—Poult. Sci., 33:112 (1954).
9. Mellon, W. J., Hill, F. W., and Dukes, H. H.—Poult. Sci., 33:791 (1954).
10. Schneider, A. J., Bohren, B. B., and Anderson, V. L.—Poult. Sci., 34:691 (1955).


## FORMULAS

(Continued from page 32)

and the restricted fed birds. It is often stated that birds that have been restricted and subsequently full fed will over-consume for a while. This is not supported by any of our experiments. At the time they go on full feed, these restricted birds are lighter. They have a lower basal metabolic rate. The energy saving from these two standpoints is sufficient to protect them during this period and they will not increase their consumption.

EFFECT OF LOW ENERGY


**LONFOSCO** Soft Phosphate with Colloidal Clay
Prepared by: Loncala Phosphate Co. High Springs, Fla.
Distributed by: Warren-Douglas Chemical Co.
1513-15-17 Burt St., Omaha, Neb.

**Quick Germination Test**

New Vitascope Tests Grain & Seed in 5 Minutes

The Vitascope utilizes the basic proven tetrazolium method. By splitting the seeds and putting them in a vacuum under constant temperature the latent germinating power is determined in minutes.

**BURROWS**
Burrows Equipment Co.
1316-C Sherman Ave., Evanston, Ill.

**BRAND®**

**KNOWN FOR EXTRA VALUE**
Farmers know the years of extra life that Red Brand gives at no extra cost. They want the added rust resistance of the only Galvannealed® fence on the market. They choose it for easy handling. And they buy Red Brand for its durability through years of livestock abuse.

**SELLS ON SIGHT**
Farmers are quick to choose Red Brand because they see and recognize the best wherever they go. Only the Red Brand line sells on sight. The bright red identification is Red Brand's distinctive guide to quality.

**ADVERTISING FOR YOU**
Farm preference for Red Brand has developed behind years of aggressive advertising and promotion. First farm magazines told the story. Then radio was added. Now television also helps carry the story directly to farmers. This three pronged drive is backed with special promotions that really move fence.

**WHAT RED BRAND PREFERENCE MEANS TO YOU**
Red Brand is the fence line farmers want. This strong demand can only result in greater volume, higher turnover and more profits. Tie in today with Keystone—the profit line.

**KEYSTONE STEEL & WIRE COMPANY**
Peoria 7, Illinois
Red Brand Fence—Red Top® Steel Posts—Red Brand Barbed Wire—Baler Wire—Non-Climbable Fence—Keyline® Poultry Netting—Gates

**NEW BAG — A sack dress and "model" to end them all was displayed at a recent Nutrena Mills sales meeting. The creation was fashioned after Nutrena's new 25-lb. dog food bag design. The "model" was Ben Eitelman, feed sales supervisor of the dog food department. The new 25-lb. bags will soon be in retail outlets. Also, the bags will be shipped in a newly-designed outer-wrap baler.**

**TYPE DIETS DURING GROWING PERIOD ON SUBSEQUENT PERFORMANCE OF BROILER TYPE BREEDER HENS — L. E. Deacon, B&D Mills, Grapevine, Texas:** As two years of previous work at our research farm demonstrated that restriction of energy intake of heavy breed hens delayed sexual maturity and increased the number of hatching eggs laid per hen, none of the experimental groups reported here were full fed. The present experiment was designed to test the effect of more severe restriction than previously used, to test the effect of reducing the energy per pound of ration with grain screenings, and to compare mash-grain feeding during the growing period with all-mash feeding.

The data demonstrated that the degree of restriction of energy intake can be changed by hand limiting high energy feeds or by the use of low energy rations. Our field observations show it is better to use a low energy ration and feed more pounds per 100 hens per day so all hens will have an opportunity to eat. These low energy rations will contain from 10 to 17% fiber and will vary in protein content from 12% for the 17% fiber ration to 15% protein for the 10% fiber rations. High energy hand limited rations may contain as much as 20% protein. Energy should be the only limiting factor. Each hen should receive its full requirements for amino acids, vitamins and minerals.

In the present experiment restricted feeding during the growing period delayed time to first egg from two to three weeks and produced a shift in the laying cycle with the heavier restricted groups laying a greater number of eggs during the latter part of the laying cycle when eggs are larger. This shift in the laying cycle was the primary reason for the heavier restricted groups laying a significantly greater number of hatching size eggs.

At the end of the period of restricted feeding, the average body weight of the pullets could be correlated with the degree of restriction. No effect on body weight due to growing rations was found after 15 weeks of full feeding all-mash breeder mash.

The 70 to 90% restricted groups showed no significant difference in number of eggs laid per hen. However, the heaviest restricted group (approximately 60% of full feed) laid significantly more eggs than the other groups.

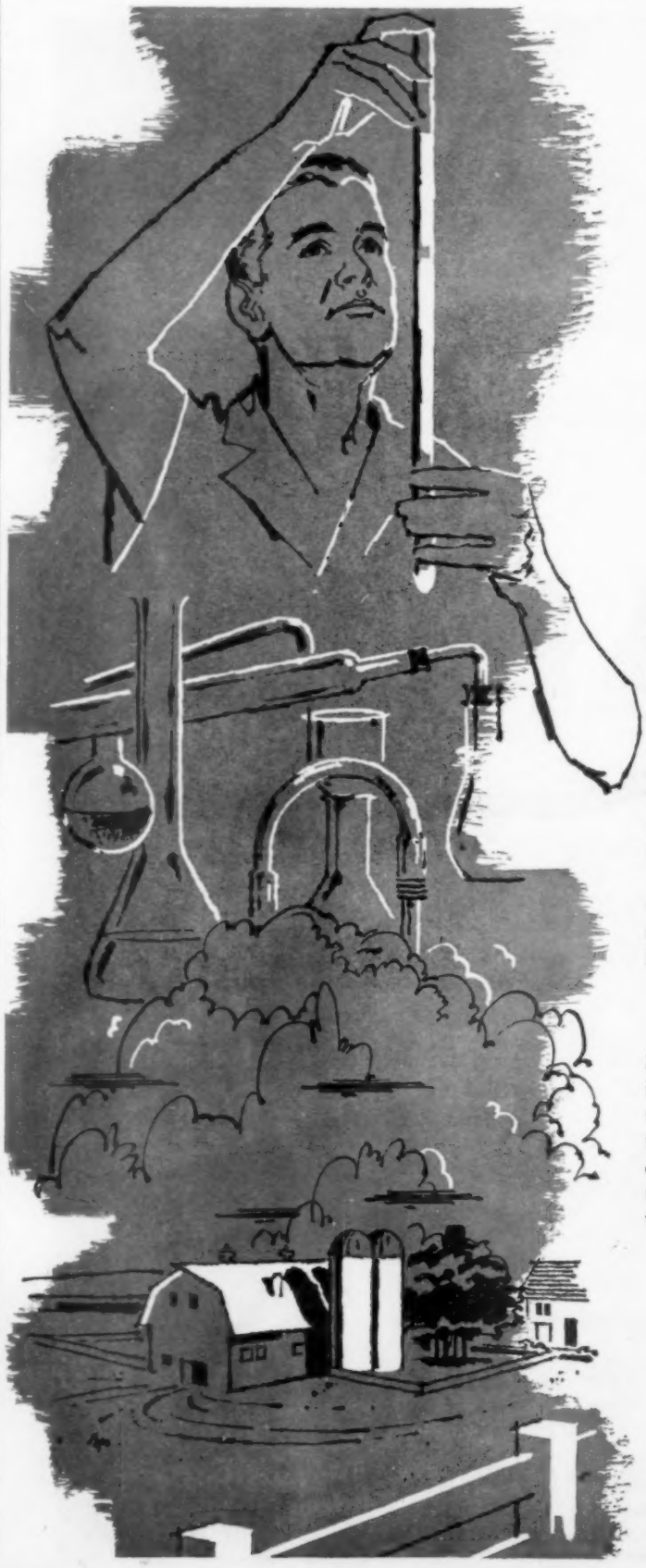
Due to the more restricted groups laying a higher percentage of hatching eggs, the net income per hen was greater in the heaviest restricted groups.

**THE FEEDING OF LOW ENERGY FEEDS TO FLOCK REPLACEMENTS—Dr. R. L. Atkinson, Texas A&M College System:** Reports from the field have indicated that the practice of feed or caloric restriction for replacement stock from the sixth or eighth week to the onset of egg production delays sexual maturity, decreases body weight at the onset of production, decreases the number of pullet eggs obtained during the early part of the production period, results in a lower mortality during the laying year and reduces the feed cost of rearing the birds to sexual maturity.

In one experiment with broiler-type birds, it was quite apparent that growth and sexual maturity could be effectively retarded through a restriction of energy intake. The most dramatic effect was on egg side during the first four months of egg production. Pullets which had been full fed during the growing period produced eggs of which only 77% weighed 22 oz. and above per dozen even after four months of production. When the same high energy feed was used but was restricted to 70% of the feed consumed by the first group, the pullets produced eggs of which 91% weighed 22 oz. per dozen or higher. Similar results were obtained with the high fiber rations.

In another experiment, feeding a ration containing 15% fiber on an ad libitum basis resulted in an egg production delay of three weeks. Sexual maturity was delayed four weeks by ad libitum feeding of a ration containing 20% crude fiber. Egg size was again increased. The preliminary results indicate that 15% fiber is probably the optimum level to use.

In an experiment with laying strain pullets, oat hulls, rice hulls, alfalfa hay and cane litter were used as sources of fiber and were added to the ration at a level of 12% total

# The Influence

Hemorrhagic conditions due to vitamin K deficiency have been largely eliminated. The widespread use of water-soluble, easily-absorbed and more potent, synthetic vitamin K has played a major role in this success.

One gram of KLOTOGEN F (Abbott's stabilized menadione sodium bisulfite) per ton of feed provides protection under most conditions. This level of Abbott's highly-active form of vitamin K has been used with satisfactory results by feed companies for several years.

But cases of hemorrhaging still arise, either as one of the symptoms or as one of the results of disease or other stresses. Under these conditions, higher levels of vitamin K may be required.

**Nutrition suffers when diseases—or other stresses—strike**

Birds need all of their strength to throw off the infection and to make rapid recovery. The additional stress of either the disease or drugs used to treat the condition may increase the need for certain nutrients. Sulfa drugs clearly increase the need for vitamin K in feeds at a time when vitamin K is low[1,2]. When adequate vitamin K

Arbor Acres

**Make sure**

**Your broilers come from ARBOR ACRES females!**

**SELLING TOOLS**

TO HELP YOU SELL MORE FEED!

FEED FOLDERS
FEED BOOKLETS
STORE POSTERS
MAILERS
LOCAL AD MATS
METAL SIGNS

SEND FOR PROOFS

Tobias Enterprises
326 North Michigan Ave., Chicago 1, Ill.

fiber. Feed or caloric restriction retarded growth and delayed sexual maturity but had no apparent effect on egg size as compared with the broiler strain birds. More research on this point is needed.

Preliminary work at the Texas station indicates that similar results may be expected by caloric restriction of turkey pullets during the growing period. Body weight was lowered, sexual maturity was retarded, and a more uniform size egg was produced throughout the laying season. No detrimental effects were noted insofar as fertility or hatchability was concerned.

**DISCUSSION FOLLOWING DR. ATKINSON'S TALK**—(On the question of experience with confinement rearing of birds on restricted diets) **Dr. Bruins:** We have a little more success with the high fiber diet in confinement than we do with feed restriction procedure. You get a little more picking in confinement than on the range. When you superimpose restriction, you occasionally get into a real problem. High fiber diets work very nicely here because the chickens are kept busy eating all the time. The high fiber diet is a little bit more adaptable for confinement rearing.

**Dr. Atkinson:** Sixty to 66% of the eggs (in the work reported on) went to the hatchery market when the birds were full fed high energy diets and about 85 to 90% on the restricted program.

(How quickly is the switch made from 20% starting ration to the low protein, high fiber feed?) **Dr. Couch:** We just change. Just like that. One day they are getting the starter. The next day they get the low protein, high fiber feed.

**COMMENTS BY HARRY GERMAN, Texas Farm Products Co., Nacogdoches, Texas:** It becomes economically very important when you apply the results of the cash savings of the high-fiber diet to hundreds of thousands of growing birds —both meat strain and market egg laying strain. Our firm and customers are pleased when we sent pullets to the laying houses at 25 weeks of age with a saving of approximately 30¢ per bird. However, in addition, savings in labor alone are terrific. We have noted on our own farms (1) no idleness or cannibalism; (2) caretakers have not had to guess or make an error in the feeding schedule; (3) one feed takes care of the birds' needs from the brooder house to laying; (4) there is an improvement in bird's feed capacity. On programs which have the bird on 70% of normal feed consumption, restriction has impaired the bird's ability to handle its laying ration.

Production of rice hulls in our area makes this the favored fiber with 3% protein and 9% TDN. With this value we can restrict energy intake very nicely.

We think that feeding of low-energy, high-fiber diets has markedly improved laying results.

# Southern Cattleman Has Bright Future, Speaker Declares

ATHENS, GA. — The outlook for the southern cattleman will continue to be bright as long as there is "discipline in marketing and adjustments are made within the industry without government controls," J. W. Fanning, head of the department of agricultural economics, University of Georgia, told cattlemen attending the annual Beef Cattle Short Course here.

Tracing the per capita consumption of beef since the close of World War II, Mr. Fanning pointed out that as beef consumption rose with heavy marketing of slaughter cattle, cattle prices declined to a greater extent than retail beef prices, resulting in profit margins "too narrow for comfort."

Mr. Fanning added that recent livestock prices have remained at more profitable levels because the marketing of cattle is proceeding at a "more orderly pace" and that only finished animals are going to market. He declared that the increased number of cattle on farms, as indicated by recent estimates by USDA, point to increased marketing next year, and that while there may be some break in prices, profit margins should remain healthy as long as marketings continue orderly and the quality remains high. He stressed that "this is no time for speculation on future livestock prices."

### Coastal Bermuda

Coastal Bermuda, a rugged and proved hybrid, is the best grass the southern cattleman has, Ralph Johnson, Georgia extension agronomist, declared, in discussing "Feed Production in Georgia."

Stating that grass "is the only crop which has no government allotments," Mr. Johnson said that Coastal Bermuda has proven itself ideal for beef production under virtually all kinds of weather conditions and its hybrid vigor has produced the "results which have enabled southern cattlemen to meet competition from other cattle-producing areas on an equal footing."

He added recent research with Coastal Bermuda has indicated its greatest value to the cattleman is yet to be realized.

He urged cattlemen at the course to give serious thought to Coastal Bermuda in their feeding programs.

Mr. Johnson also predicted increased corn yields in the South as

Research Progress Report: KLOTOGEN-F®

*of Disease and Other Stress on Vitamin K Requirements in Poultry Rations*

is given, counteracting its most specific stress effect, the sulfa drug hits the parasite rather than the host.

Harms and Tugwell have shown that vitamin K-deficient birds readily bleed to death when subjected to coccidiosis[3]. But when birds had adequate vitamin K prior to infection, mortality was negligible[3,4]. This finding was duplicated in our own laboratories[5].

Nelson and Norris concluded that some specific feed additives increase the requirement for vitamin K[6]. They suggest that at least two grams per ton of menadione sodium bisulfite be used to increase the vitamin K activity of rations containing these feed additives.

In trouble-shooting feeds—particularly where high levels of sulfa drugs are used to arrest coccidiostatic conditions—the use of 2 to 4 grams of KLOTOGEN F per ton provides a more effective level of anti-hemorrhagic protection than the 1-gram level. With renewed use of sulfa drugs in therapeutic feeds, such a change in recommendations would be warranted. Abbott has had recent occasion to recommend 4 grams per ton of KLOTOGEN F in specific cases.

Nelson and Norris found that 7.5 grams KLOTOGEN F per ton provided adequate anti-hemorrhagic protection when 0.125% sulfaquinoxaline was used[6]. This is in accord with *our* published findings[2].

Thus, studies are straightforward in a few diseases—such as coccidiosis—where the parasite is handy to use. Here, one can define all aspects of the problem and study each aspect individually. However, a major problem still exists in finding where nutrition fits into susceptibility and severity of other diseases, such as C-R-D.

There may not be many instances where diseases, other stress, or drugs create a need for higher levels of vitamin K in rations. But where such instances arise, use of more than the 1-gram level of KLOTOGEN F can be recommended with safety, and the recommendation based on experimentally-proved results.

As further research is completed on the broader aspects of vitamin K usage, Abbott will report the findings.

REFERENCES

1. Frost, D. V., and H. C. Spruth, Control of Hemorrhagic Condition in Chickens with Menadione Sodium Bisulfite, Poultry Sci., 34:56, 1955.
2. Frost, D. V., Perdue, H. S., and H. C. Spruth, Vitamin K Activity of Menadione Sodium Bisulfite in Chickens, Journal of Nutrition, 59:181-196, 1956.
3. Harms, R. H., and R. L. Tugwell, The Effect of Experimentally Induced Prolonged Blood Clotting Time on Cecal Coccidiosis of Chicks, Poultry Sci., 35:937-938, 1956.
4. Tugwell, R. L., Stephens, J. F., and R. H. Harms, The Relationship of Vitamin K to Mortality From Cecal Coccidiosis, Poultry Sci., 36:1245-47, 1957.
5. Otto, G. F., Jeske, H. A., Frost, D. V., and H. S. Perdue, Menadione Sodium Bisulfite Complex (Klotogen F) in Cecal Coccidiosis, Poultry Sci., 37:201-205, 1958.
6. Nelson, T. S., and L. C. Norris, Factors Affecting the Vitamin K Requirement of the Chick, Proceedings, Cornell Nutrition Conf. for Feed Mfgs., p. 76, Nov. 1956.

Abbott LABORATORIES

CHEMICAL SALES DIVISION • NORTH CHICAGO, ILLINOIS

606601

PAY WAY® EXTRA RICH FEEDS ARE FAST SELLERS

PayWay Feed Mills, Inc: Kansas City, Mo.

More profit on feed when you mix your own brand!

BROWER *Whirlwind* FEED MIXER

Earn up to $1.50 profit per bag by mixing your own brand of feed with the BROWER MIXER . . . the extra profits soon pay for it! WHIRLS the ingredients instead of just tumbling them . . . mixes a perfect blend in about 10 minutes . . . fast, economical! Built for years of trouble-free service. Five sizes. World's Largest Selling Mixer!

BROWER MFG. CO., 566 N. Third St., Quincy, Ill.

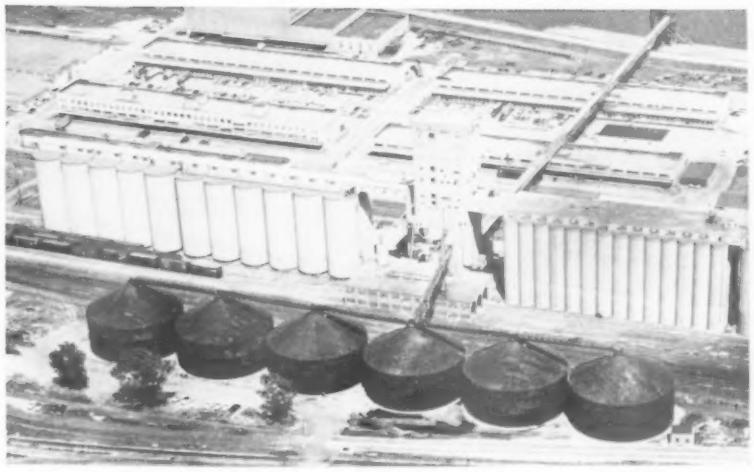
Write for FREE CATALOG

**Constant Source of Supply**

A "Background" of vast forest reserves, basic pulp production and kraft paper manufacturing is behind every Multiwall order serviced by Raymond. As a division of the Albemarle Paper Mfg. Co., Raymond provides Multiwall users with a dependable source of supply, assuring the prompt deliveries necessary to meet production schedules of today's manufacturing lines.

Special Problem? New Multiwall developments may be the answer. Write Raymond Bag Corporation, Research & Development Division, Middletown, Ohio.

Raymond
BAG CORPORATION
*A division of Albemarle Paper Mfg. Co.*
MIDDLETOWN, OHIO • RICHMOND, VA.



**STORAGE CAPACITY BOOST—These six steel grain storage tanks, erected in less than two and a half months by the Sapulpa (Okla.) Tank Co., recently added 2.7 million bushels to the storage capacity of the River Rail elevator at Kansas City, Kansas, operated by Bartlett & Co. Each tank holds 450,000 bu. The long conveyor in the center of the picture is for loading and unloading barges. The tanks are 114 ft. in diameter with a shell height of 44 ft. Center height is 77 ft., giving the tanks a 27½° roof slope which approximates the angle of repose of stored grain. The roofs are self-supporting, an innovation in which Sapulpa has pioneered. Donald H. Judd, vice president and treasurer of Sapulpa, stressing economical aspects of this type of storage, said each tank weighing 230 tons requires only about one pound of steel for each bushel of storage space.**

further steps to increase feeding efficiency and cutting production costs. He cited several examples where Georgia farmers had harvested as much as 106 bu. per acre on a 30-acre plot, with adequate fertilization and soil management.

He said field tests indicated corn can be produced in Georgia for as little as 60¢ bu.

### Need for Quality

While profitable beef production depends a great deal on the good-will of the consumer, the real virtue of any beef production program is getting a calf per cow per year, Prof. L. E. Kunkle, Ohio State animal science department, told those at the day-long meeting.

"We must strive to produce, in quantity, the quality type animal sought by the packer and demanded by the consumer," he said, "and there's no reason why we should breed or feed a poor grade animal when we have modern beef cattle with which we can work."

Prof. Kunkle added that "time means a lot to a beef animal" and cattlemen should buy animals to feed which have the ability to grow and should sell animals when they have the quality finish in the peak of marketing condition.

The physical plant and the feeding of the ration in the proper proportions are the two most important factors in steer feeding operations, D. W. Lewter, Lubbock, Texas, feedlot operator, said.

Mr. Lewter, a former Texas county agent, explained his steer-feeding operation which has a capacity of 25,000 head. He said the key in the management of a project that size is adequate help—quality more than quantity—and that he had one person, including office personnel, per thousand head of cattle. He emphasized the need to select the right man for the right job—then let him take over.

He said he had chosen Lubbock as the location for his plant over numerous other cities because of the proximity to a supply of feed ingredients, in addition to adequate clean water—a vital factor in feedlot operations.

His plant includes eight storage bins with a total capacity of 325 million bushels and 20 acres of feedlots—an investment approximating $2 million.

His ration is built around milo as his grain. He said that milo has almost the same feed value as corn, is actually lower in cost to feed, and average yields range from 3,000 to 4,000 lb. per acre.

Cottonseed meal, secured from a nearby processing plant (a factor in selecting Lubbock) is his chief protein source. Roughage consists of cottonseed hulls and pelleted alfalfa hay, plus minerals and vitamins, including powdered cod liver oil.

Mr. Lewter stressed the importance of the quality of the cattle when buying as well as selling and declared that it is just as important to upgrade the animal while on feed as it is to put on low-cost, fast gains.

### Importance of Selection

Pointing out that the selection of good feeder calves is the "No. 1" problem of the commercial feedlot operator, Mr. Lewter declared that cattle "well bought are half sold." He added that when the buyers of slaughter cattle know the feeder calves are carefully selected when they are purchased, they have more confidence in the operator when he sells them as slaughter cattle.

He expressed the belief that it is just as important for the small operator to watch details to prevent profit leaks as it is for the large scale feeder, and added that Georgia's progress in building permanent pastures—typical of improvements he had noted in other southern areas—is providing the cattle farmer "virtually unlimited opportunity for profitable cattle production."

He added he expects a definite expansion in feedlot operations in the South and along the Atlantic Seaboard as grain production continues to increase and replace cotton acreage.

### Bull Testing Program

A new service for Georgia cattlemen—performance testing of bulls—will be inaugurated early in October, B. L. Southwell, head of the animal industry department at the Georgia experiment station in Tifton, announced.

## Southern Cotton Oil Sells Alabama Plant

ANDALUSIA, ALA.—The Southern Cotton Oil Co. plant and equipment here have been purchased by R. B. Anderson, president of the Anderson Peanut Co., and O. R. Hipp, president of the Andalusia Gin Co.

The sale price was not disclosed.

The plant will not be placed back in operation but will be kept intact for future demands, Mr. Anderson and Mr. Hipp said. The Southern Cotton Oil Co. (Scoco) recently announced it was closing the local operation effective Sept. 1.

Included in the purchase are the Scoco cotton gin, feed mill, offices, warehouse buildings and nine acres of land.


No claims necessary!

"SNOW FLAKE" BRAND OYSTER SHELL SPEAKS FOR ITSELF!

SEND FOR SAMPLES AND SEE PROOF OF ITS HIGHER QUALITY.

Phone OR 2-9441
WRITE WIRE PHONE

MAYO SHELL CORP.
P. O. BOX 784 • HOUSTON, TEXAS

J. H. LEFTWICH & CO., Inc.
BLACKSTRAP MOLASSES

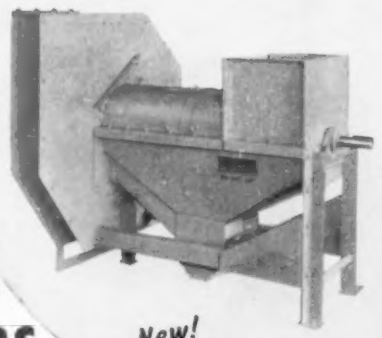
Phone HEmlock 2-8771 Mobile, Ala. P.O. Box 78

Savannah, Ga.
New Orleans, La.
Tuscaloosa, Ala.
Jacksonville, Fla.
Corpus Christi, Texas
Nebraska City, Neb.

*Shipments by Rail Tank Car, Truck Transports and Barge*

Want Faster Corn Shelling and Lower Cost Operation?

Specify TRIUMPH Zip COB BLOWING CORN SHELLERS



New! Triumph No. 500 CORN SHELLER

*More Universally used by Feed Mills than any other make Sheller.*

TRIUMPH ZIP Cob Blowing Corn Shellers are modern machines developed to simplify the shelling and cleaning of corn, and the handling of cobs, for Feed Mills. With TRIUMPH, faster shelling rates are possible, with less first cost and lower operating costs.

Although simple in design, they contain many exclusive features developed by TRIUMPH engineers. TRIUMPH Zip Cob Blowing Corn Shellers are easy to apply and to operate . . . but capable of handling any condition of ear corn brought to Feed Mills, efficiently and fast. Maintenance, breakdown, and chokings are reduced to a minimum assuring lowest cost operation.

Thousands of TRIUMPH Zip Cob Blowing Corn Shellers are in use in Feed Mills everywhere. Their popularity is soundly based on proven performance and results.

TRIUMPH Engineers and Distributors offer years of experience in handling ear corn and designing corn shelling systems . . . a plus value gained only through buying TRIUMPH.

**No. 100**
Ideal for Smaller Feed Mills
Simple, Dependable, Efficient
6 to 8 tons per hour.*

**No. 150**
Designed for use on
Mobile Feed Mills
or other portable uses
6 to 8 tons per hour.*

**No. 300**
Fast Shelling for Larger Mills
at low first cost
13 to 18 tons per hour.*

**No. 500**
New Rugged Sheller for
Heavy Shelling Requirements
18 to 22 tons per hour.*

*Shelling rate based on tons per hour of machine picked ear corn.

TRIUMPH
CORN SHELLERS
THE C. O. BARTLETT & SNOW CO.
6249 HARVARD AVENUE • CLEVELAND 5, OHIO

GET FULL DETAILS. *Write for the catalog today!*

# NEW BEEF FEED IDEA:

**an "extra-gain" nutritional feed that also helps maintain high health levels, fights bloat, liver abscesses and bacterial diarrhea!**

# PLUS PERFOR
# Containing

### GIVE FEEDERS THESE NUTRITIONAL PLUSES!

Up to ¼ lb. more gain per head per day over 100-day feeding period.

Improved feed efficiency... average 8% improvement.

Better hair coat, better conditioned animals that buyers look for.

### GIVE FEEDERS THESE DISEASE PREVENTION PLUSES!

Bloat reduction . . . both in pasture and feedlot.

Fewer liver abscesses . . . particularly in heavy-fed animals.

Reduced incidence of bacterial diarrhea and secondary infections.

Most present day beef suppl
classes: nutritional feeds an
Now, recent disease-fighti
nutritional levels make pos
these feeds: a nutritional fee
feed efficiency and help preve
severity of bloat, liver absce

New feed and servi

What are the biggest probl
tomer or prospect?
Chances are—number on
get more meat from every
Second, how to reduce los
caused by bloat, liver absce
Now, you can help him sc
feed—a feed so versatile it
PERFORMANCE" feed.

PLUS nutritiona
alone more tha

The results of 20 trials with
that rations containing T
growth rate and feed efficier
and high roughage diets.
Terramycin-fed animals
more per head.
In 14 trials with over 2,2
ing both Terramycin and st
average of 9% and feed e
over rations containing still

# MANCE FEEDS

# Terramycin®

BRAND OF OXYTETRACYCLINE

ements fall into two general
d disease-fighting feeds.
ng claims for Terramycin at
ible a combination of both
l to promote extra gains and
nt and reduce incidence and
sses and bacterial diarrhea.

ce opportunity

ems of your beef feed cus-

e on his worry list is how to
ound of feed.
ses and poor-doing animals
sses and bacterial diarrhea.
lve both problems with one
names itself as a "PLUS

l performance
n pays for feed

over 2,500 animals showed
erramycin improved both
cy an average of 8% on low

returned an average $3.15

00 animals, rations contain-
ilbestrol improved gains an
ficiency an average of 6%
estrol alone.

These trials showed an average increased return for each animal getting Terramycin plus stilbestrol of $4.19 over those getting stilbestrol alone.

In many of the trials, it was observed that animals getting Terramycin were better conditioned and had a better hair coat . . . the kind of bloom cattle buyers look for.

These nutritional pluses *alone* will more than repay the feeder for buying your PLUS PERFORMANCE feed.

### Your PLUS PERFORMANCE feed helps prevent 3 costly diseases, too!

Three years of field testing and research at two Midwestern university experiment stations showed Terramycin in the ration reduced the incidence of bloat an average of 76% .

A summary of results at eight buyer-packer plants with 14 lots of animals (759 head) showed that upon slaughter only 5 livers were condemned by federal inspectors because of liver abscesses compared with their usual condemnations of 10% or higher in animals not getting Terramycin.

Terramycin's value in reducing the incidence and severity of bacterial diarrhea is equally well documented.

### How you can make a PLUS PERFORMANCE feed

There's no formulation problem in making a PLUS PERFORMANCE feed. Just add Terramycin to your best beef ration at a level that supplies each animal with 75 mgs. of Terramycin a day.

Sample tags are available showing proper labeling and giving recommendations and directions for use of a PLUS PERFORMANCE feed.

### Be ready for this fall

Pfizer is starting immediately a national advertising and educational program to bring feeders the specific advantages of these new PLUS PERFORMANCE feeds.

By formulating this new feed now, you can capitalize on the interest this program will create this fall.

Your Pfizer representative will gladly supply you with additional documentation of the many claims you can make when your beef feed contains Terramycin at the recommended level. He'll also outline in full detail the many opportunities for extra profit, sales and service this new PLUS PERFORMANCE feed offers. Call him soon.

Pfizer

Chas. Pfizer & Co., Inc.

*World's largest producer of antibiotics*

630 Flushing Ave., Brooklyn 6
6460 W. Cortland St., Chicago 35
7600 Ambassador Row, Dallas 7
5251 Peachtree Industrial Blvd., Chamblee, Ga.
1500 16th St., San Francisco 3
In Canada: 5330 Royalmount Rd., Montreal 9, P. Q.

# Pictures Help Sell Feed

Field salesmen for the Moorman Manufacturing Co., Quincy, Ill., are using cameras to help merchandise the firm's concentrate feeds and parasite control products for livestock and poultry.

Throughout the Moorman organization documentary photography is used in the following ways:

1. Testimonial photos are framed and presented to customers as witness to their skill in care and feeding.

2. The testimonial photographs (complete with weight or production gains, cost of feed consumed and comments on Moorman results in the customer's own words) become a part of a traveling album used by each salesman to sell new customers.

3. The best of the photographic testimonials are incorporated into Moorman's national advertising campaigns and direct mail literature.

According to Cliff Garrison, manager of sales training for Moorman, "Blue sky and bushels of promises will not sell feed. Facts are what the customers want. And facts are what the customers get, thanks to photography."

Mr. Garrison also pointed out that the photographs serve as excellent ice-breakers. He said few salesmen get "frozen out" when they begin sales presentations with "Got a picture of farmer Smith down the road . . ."

Mr. Garrison also explained that the "snap n' sell" program dovetails ideally with the firm's sales coverage plan, since all salesmen cover exclusive areas. "Word-of-mouth publicity generated by customers' framed photographs makes the salesman welcome throughout his area," he said.

**PRODUCTION RECORDS—Along with use of photographs, J. W. Joy, Corin, Mo., feed salesman for the Moorman Manufacturing Co., Quincy, Ill., helps and encourages customers to keep production cost records in their feeding programs.**

### Guide Rules

Three simple rules that Moorman salesmen follow in their photography are:

1. Show at least one member of the customer's family in the picture with the featured poultry or livestock.

2. Do not show Moorman product containers.

3. Do not include yourself in the picture.

The company supplies photographic finishing service at about 25% of cost to its field representatives, offering to develop and print the first roll free to get the salesmen started shooting. In addition, salesmen can win cameras and photographic equipment in periodic sales contests conducted by the company.

Presently a large percentage of the firm's salesmen carry cameras on their sales calls. From the beginning of the program in 1952 to date, "tens of thousands" of testimonial photographs have been taken, contributing materially to Moorman's sales program effectiveness, according to Mr. Garrison.

**SELLING AID—Photographic equipment is a regular selling tool for J. W. Joy, Corin, Mo., feed salesman for the Moorman Manufacturing Co., Quincy, Ill. Having found that photographs help sell its products, the company encourages salesmen to use the "snap n' sell" technique.**

### ADDS STORAGE BINS

LINDSBORG, KANSAS — Lindsborg Grain, Inc., which recently increased its grain storage capacity to over 1 million bushels, is now adding 12 new bins with a capacity of 115,000 bu. The new bins, made by Black, Sivalls & Bryson, Inc., Kansas City, will be 25 ft. high and 24 ft. in diameter. Brummel Construction Co., Garnet, Kansas, has the contract.


FOR THE LOWEST COST PER UNIT OF PHOSPHATE TURN TO . . .

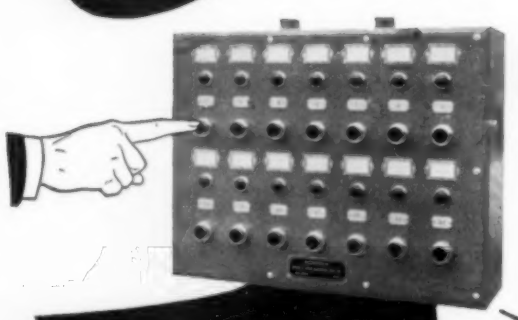
COLUMBIA SOLUBLE PHOSPHATE

*Write for full information and prices . . .*

COLUMBIA PHOSPHATE CO.
1007 Washington Ave.
St. Louis 1, Missouri

NOW PUSH BUTTON CONTROL

FOR DISTRIBUTION OF
DRY BULK MATERIALS



Do you ever wonder if your distributor is set on the right bin? The new FOOL-PROOF Hayes & Stolz Electric Distributor removes all doubt by signalling accurately your loading position at all times. Position can be changed only by a numbered push-button on the control panel, assuring positive selection. The new H & S Electric Distributor can be fitted with 5 to 20 openings. The diameter of these openings can be specified in 6", 7", 8" 10" and 12" sizes. Adaptable to mounting on elevator legs, collectors, sifters, mixers, screw conveyors and belt conveyors.

H S Electric Distributor

CAN BE CUSTOM-BUILT IN ALL SIZES TO FIT YOUR PLANT NEEDS

*Extra monitor panels are available to allow for check on settings from anywhere in your plant.*

Engineered with care and fully backed by HAYES & STOLZ WARRANTY

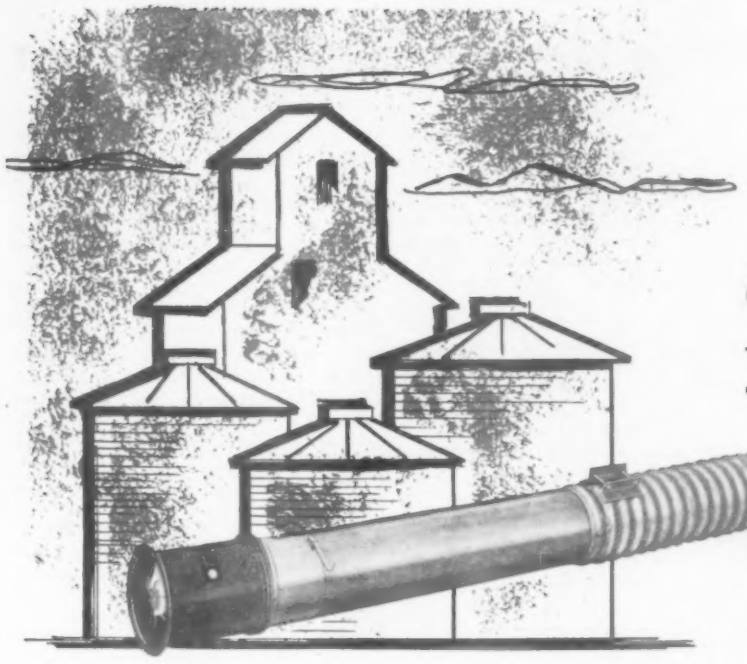
Hayes & Stolz INDUSTRIAL MANUFACTURING CO., INC.

3521 HEMPHILL ST. P. O. Box 953 So. Side Sta., Fort Worth, Texas

Herman Nagel's Trace Mineral CONCENTRATE

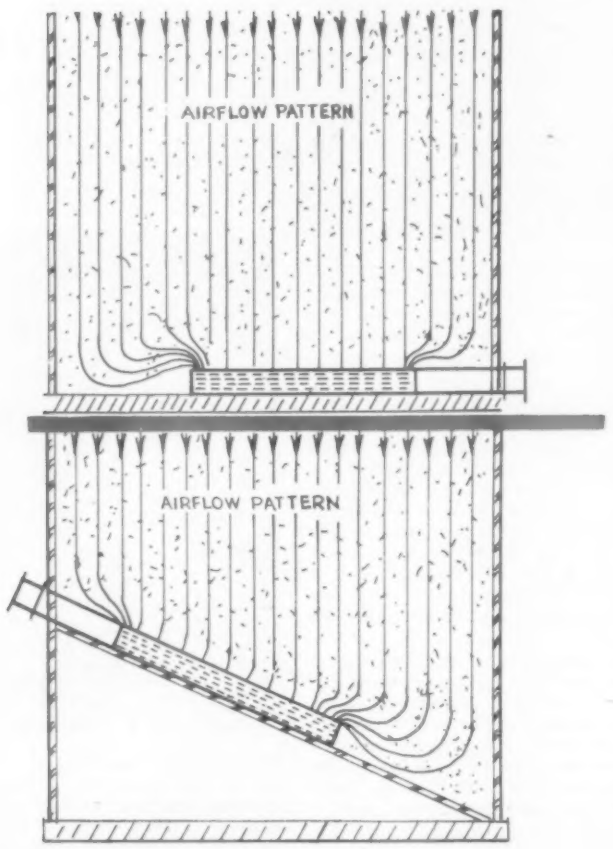
Where only trace minerals are to be added, Herman Nagel's Trace Mineral Concentrate supplies all eight, in correct balance.

THE HERMAN NAGEL CO.
53 W. Jackson Blvd., Chicago 4, Ill.



# aerate your small storage with this low-cost DO-IT-YOURSELF aeration package

***Specifically designed and engineered for small bins.***




**The POWERATOR gives you perfect aeration in either flat or hopper-bottomed bins. Available in 8" duct for your smaller storage, 12" duct for bins up to 10,000 bushels. Fans for each size are removable, portable, and completely weathertight. Fan operates on either 110 or 220 volts.**

Now, for the first time, you can have top quality Rolfes aeration at a new bottom-dollar price.

The new Rolfes POWERATOR, specifically designed for bins from 3,300 to 10,000 bushels, uses the same sound engineering principles that have made Rolfes famous as the leading name in commercial aeration. It offers you the same outstanding performance for small storage as the large Rolfes systems that safeguard many of the country's largest elevators.

The POWERATOR gives you genuine Rolfes aeration at a new low price . . . thanks to a design so simple and efficient that you can make the entire installation yourself. Because we don't need to furnish a crew of trained installation experts, and because no welding is required, you save the money that would formerly have been spent for labor.

The engineering's built right in to save you time and money. We supply the Rolfes Aeration know-how in this convenient package system . . . you just set it up, using the simple but complete instructions that are furnished.

Start earning those extra profits made possible by aerated grain storage now . . . save hundreds of dollars by installing your own Rolfes POWERATORS. To find out all the details, just contact your Rolfes representative or mail the attached coupon. We'll send you the complete story on this amazing new advance in aeration.

GRAIN AERATION Rolfes COMPANIES

**ROLFES**
GRAIN AERATION
COMPANIES

BOONE IOWA

**ROLFES GRAIN AERATION COMPANIES**
**BOONE, IOWA**

**Gentlemen:**

**Rush me complete information, including new low prices, on the POWERATOR do-it-yourself aeration package.**

**NAME**_____

**FIRM**_____

**TOWN**_____ **STATE**_____

FOR
BEST SERVICE
ON
VITAMINS A & D
ALL TYPES — ALL POTENCIES
PLUS
PREMIXES
Call

RUDY ESCHENHEIMER COMPANY

BOX 147
CHILLICOTHE
MISSOURI
PHONE 1047

Serving the
Feed Trade
For Over
20 Years

Stonemo Introduces Another Fine Product
to Increase Poultry Profits!

It's
Sta-Kleen
NESTING
MATERIAL

1. Coats and dehydrates droppings
2. Keeps eggs clean
3. Reduces egg breakage
4. Assures higher quality eggs

Sta-Kleen is nationally advertised to help you build volume fast. It's a needed product that will give you repeat business with a good margin of profit.

Sta-Kleen comes to you in 50 lb. multiwall bags, and may be purchased with your requirements of Stonemo Granite Grit. For prices and further facts write—

STONE MOUNTAIN GRIT CO., INC.
Lithonia, Georgia

# One Man Operates Feed Mill With New Building, Equipment

An example of how the pushbutton age is fast making inroads into bulk feed distribution is a new bulk pellet receiving station with rolling and mixing equipment recently put into service at La Junta, Colo. The installation provides efficiency by which a large-scale operation can be handled by one man.

The establishment is Duncan Feeders Supply, operated by Efton Duncan as the successor to his former Duncan Feed & Hatchery Co. He set about some time ago to convert his former feed and hatchery business to a large scale bulk feed distributor.

It took many months and a new building, but now Mr. Duncan can handle grains and feeds with a minimum of labor and the highest efficiency. It's all done through a system of hoppers, bins and conveyors, compactly arranged in the new building.

The new mill was designed for Mr. Duncan after studies and conferences with John Hull, sales manager of Steel Structures, Inc., Colby, Kansas, representative of the Behlen Manufacturing Co., Columbus, Neb., which produces a frameless metal building. The Colby firm erected the Behlen building and procured and installed the equipment.

La Junta is the center of a large cattle and poultry feeding area in the Arkansas River Valley, and Mr. Duncan devised the new mill to better make use of locally-grown grains in feed processing.

As many as 300,000 turkeys are fed in the local La Junta service area, and more than 25,000 cattle are fed in a comparable nearby area. This offers a great opportunity for a feed service outfit, and Mr. Duncan is geared to mesh with the opportunity.

The building measures 32 ft. by 32 ft. and has 20 ft. sidewalls. A large door on the street side permits easy access to the work floor from which the company delivery truck may be loaded. A rail siding adjoins the building on the north, while an off-street truck drive is provided next to the large door on the south side of the work floor. The structure is erected from channel-ridged panels which are bolted together and provide their own strength.

The north half of the building is divided into five bins, each hoppered to a conveyor belt. The other portion of the building is devoted to a work floor, and here his equipment includes a dry rolling mill, a holding bin for whole grains and a vertical feed mixer, fed from the distributor head.

**Equipment**

The equipment includes a Mid-Star rolling mill, a Butler holding bin, a Kelly-Duplex vertical feed mixer and a Fairbanks scale for weighing ingredients.

Grain or pellets from any of the bins can be released to the belt which delivers them to a hatch. A vertical conveyor takes the grain from the hatch to a distribution head from which it may be routed by remote control to the desired bin, to a waiting truck or to a rail gondola.

To carry on this mixing, one man at the control panel can accomplish the work simply by pushing buttons which activate electrical equipment controlling the conveyor and belt system.

Mr. Duncan is now in his 13th year in business in La Junta as a Purina Check-R-Mix dealer, and in making the shift from the hatchery business to the bulk pellet receiving station and feed mill he received financial backing from Purina. Including former locations in Missouri, he has been affiliated with Purina over 22 years. Mr. Duncan estimates he has invested over $30,000 in his present facilities, including the Behlen frameless metal building.

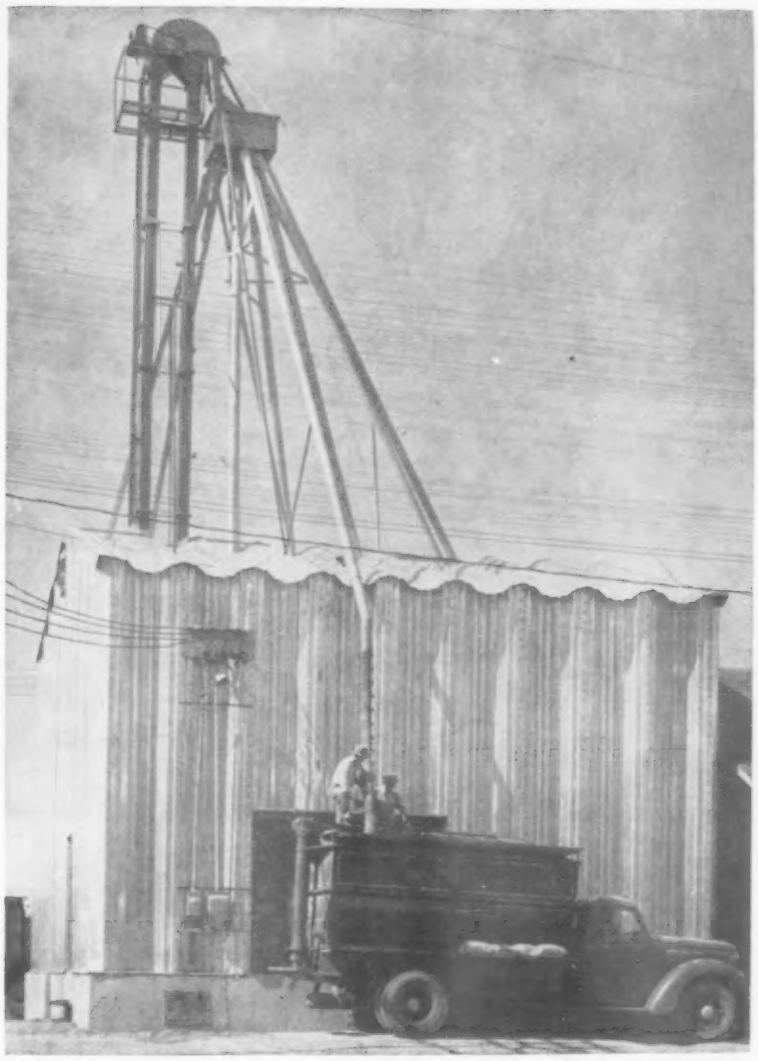
**Increased Volume**

Operating as a hatchery and feed business in 1956, Mr. Duncan's output was over 35,000 bags of feed. Now, with his bulk pellet station, he is handling feeds in ton lots, and his annual sales may reach the 40,000 to 50,00-ton bracket.

Modern equipment is the answer

**CHECKING—Checking an order for formula feed are Mr. and Mrs. Efton Duncan, operators of Duncan Feeders Supply, Purina dealer serving the fowl and livestock feeding industries in the LaJunta, Colo., area. Mr. Duncan is mill operator. His wife doubles as office manager and homemaker.**

**CONTROL PANEL—Key to the one-man operation of the Duncan Feeders Supply, La Junta, Colo., is this control panel. Efton Duncan (left), owner of the mill, is talking it over with John Hull, sales manager of Steel Structures, Inc., Colby, Kansas. Controls permit flow of grain into or out of any one of five bins, through rolling mill and feed mixer on his work floor, into his delivery truck, or from a freight gondola on the rail siding adjoining the mill.**



**COMPACT OPERATION—A compact feed operation is contained in this frameless metal building of the Duncan Feeders Supply, La Junta, Colo. The building was designed to Mr. Duncan's specifications and erected by Steel Structures, Inc., Colby, Kansas, representative of the Behlen Manufacturing Co., Columbus, Neb. Mr. Duncan is shown atop his delivery truck checking an order of turkey feed.**

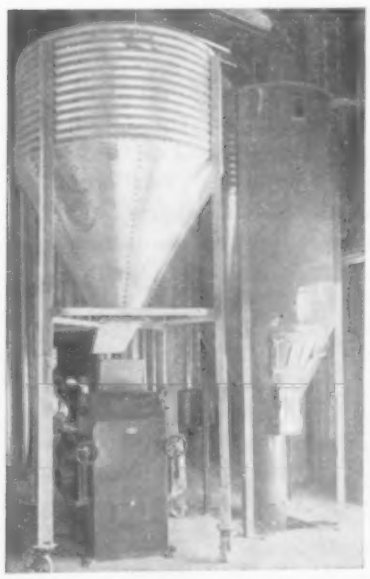
as Mr. Duncan sees it. Much of the necessary equipment is housed in the concrete basement under the building. Through this equipment he can unload a gondola of 45 tons in 70 to 75 minutes. And through his feed mill he can mix six tons of formula feeds in about two hours.

Deliveries are made in a hoppered truck, and with his complete set-up Mr. Duncan is able to supply large orders of specified formula virtually the same day. The truck delivery equipment is a six-ton Dodgen Bulkanizer.

All along the way he has received able assistance from his wife, Mrs. Juanita Duncan, who has handled the details of office and bookkeeping, and thus doubles as homemaker and feed mill office manager.

The building actually was erected in the summer of 1957, and most of the equipment installed then. In the meantime, however, Mr. Duncan has added to his facilities by building storage bins adjacent on the west to his feed mill. This structure has four compartmnts each with a capacity of 1,600 bu., and the bins are elevated to accommodate a truck drive-through. Loading a large truck is just a matter of minutes with this arrangement.

These facilities, he feels, put him in a favorable position to serve the fast-growing feed business in the Arkansas River Valley surrounding La Junta.



**MIXERS—Mixing equipment at Duncan Feeders Supply is shown here on the work floor. The rolling mill (center) is a Mid-Star, the holding bin is by Butler and the vertical feed mixer is a Kelly-Duplex. The holding bin can be moved about on its rollers by one man. The rolling mill and the feed mixer empty to the floor below and via an endless belt conveyor to the pit from which the feed can be picked up by the distributor head.**

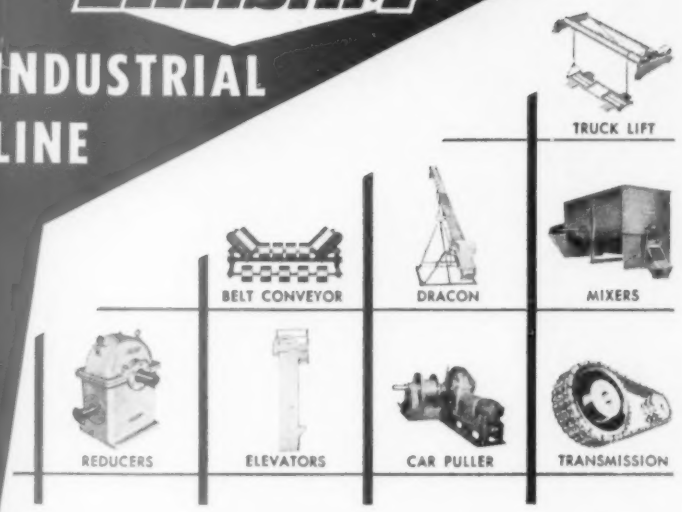
## Wirthmore Supervisor Moved to Carolinas

BOSTON, MASS. — Roger Ham, poultry service supervisor for Wirthmore Feeds, Inc., is now with Wirthmore Mills, Hickory, N.C., where he is devoting full time to serving poultrymen and feed dealers in the Carolinas.

Mr. Ham has been with Wirthmore since 1945. He had formerly spent eight years of work and study in the poultry laboratory of the University of New Hampshire. After four years with Wirthmore in the New England area, he was appointed service supervisor and moved to Salisbury, Md., to promote the first sales of Wirthmore feeds outside New England.


FOR EFFICIENT HANDLING OF MATERIAL

Specify THE EHRSAM INDUSTRIAL LINE




THE J. B. EHRSAM & SONS MFG. CO.
Dept. R — Enterprise, Kansas

SALES OFFICES
Kansas City, Kansas — Phoenix, Arizona — Erie, Pennsylvania
WEST COAST: Ehrsam Pacific, Inc., San Francisco, California

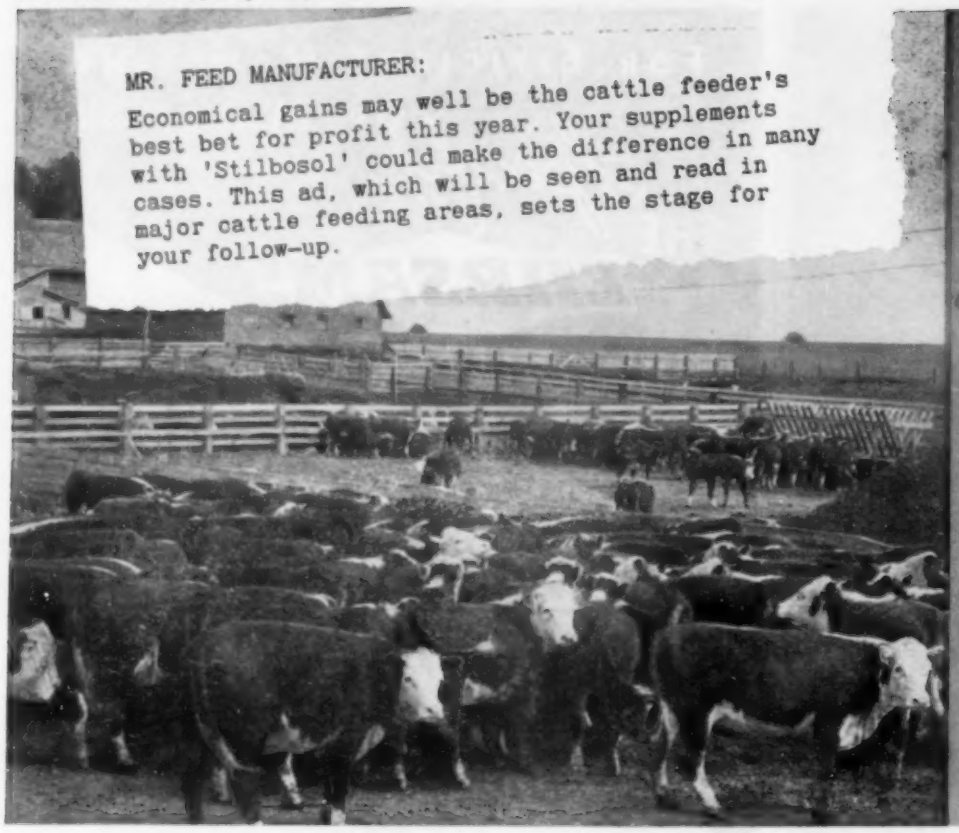
You can MAKE *Healthy Profits* SELLING Sta-Kleen NESTING MATERIAL

Now you can sell at a good margin of profit a badly needed repeat item. It's Sta-Kleen, a rare natural clay nesting material that gives poultrymen more clean eggs and fewer broken ones.

This remarkable product quickly coats droppings, dehydrates them, reduces egg shell soil up to 80%.

*Write for prices and literature. Address:*
STONE MOUNTAIN GRIT COMPANY, INC., Lithonia, Georgia

Sta-Kleen ...another fine product to increase poultry profits


MR. FEED MANUFACTURER:
Economical gains may well be the cattle feeder's best bet for profit this year. Your supplements with 'Stilbosol' could make the difference in many cases. This ad, which will be seen and read in major cattle feeding areas, sets the stage for your follow-up.

## How

**The facts upon which these simple graphs are based are the average figures for extra gains and feed savings in 23 tests conducted at 11 college experiment stations where high-energy rations were used.**

**No dollar-and-cents figures can be applied to the feeding-margin graph. These will vary, of course, depending upon the cost of feeder cattle, the price of feed, and the market price for your cattle. The principle of how 'Stilbosol' widens feeding margins operates in your favor at all times, however. This is because 'Stilbosol' helps you make more beef at less cost.**

## *it's easy to see why...*

# 'Stilbosol' earned its way into cattle rations

***Gain-booster helps open up margin between income and feed costs. Gives feeders breathing space in tight markets, increases opportunity for profit as conditions improve.***

**by Eugene S. Hahnel**

With each passing month 'Stilbosol' in supplement gains more acceptance as a basic part of cattle fattening rations. Why? Because it has performed up to the expectations of cattle feeders everywhere.

**Higher gains on same investment.** The *average* extra daily gains of cattle on high-energy rations due to 'Stilbosol' in 23 feeding trials at 11 college experiment stations amounted to 15%. Apply this average figure to your own feeding operations. It means having 15% more beef to send to market, in the same time . . . but without having to buy, care for, or feed more animals than you now do.

**Saves 1 pound in 10.** Not only do feeds with 'Stilbosol' boost daily gains, they also cut the cost of each pound of gain. The average feed consumed per pound of gain (in the same feeding trials mentioned above) was 11% less for 'Stilbosol'-fed cattle than for those getting identical rations without 'Stilbosol.' This amounts to saving more than one pound of feed out of every 10 pounds you feed. Quite a bonus!

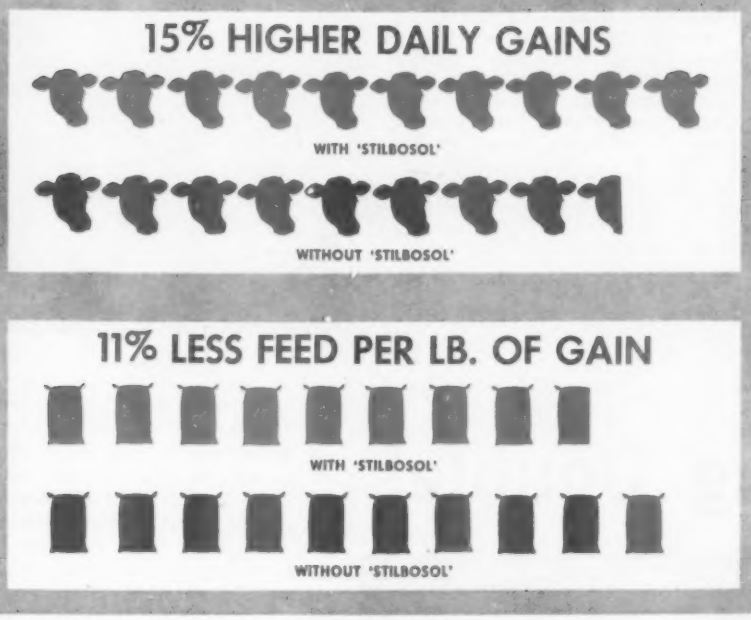
**More opportunity . . . less risk.** There are, of course, other factors besides rate of gain and feed per pound of gain that determine *profit*. How much you pay for feeder stuff and how much you get per hundred at market are two important ones. But, everything you do to widen your *feeding margin* increases your chances for good profit. 'Stilbosol,' by increasing your rate of gain and cutting the amount you must feed for each pound of gain . . . both by substantial amounts, brings you new opportunity for higher profits.

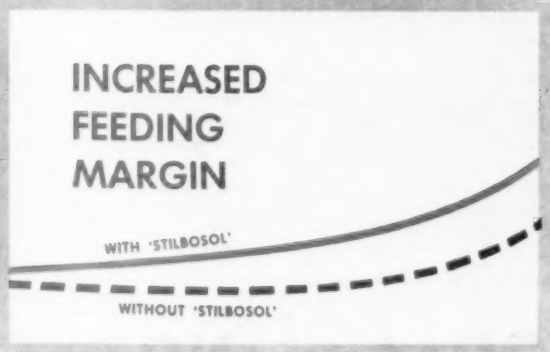
**Convenient . . . automatic.** Finally, to include 'Stilbosol' in your ration you don't have to change one single step in your method of handling cattle. No individual handling, no extra mechanical equipment, extra labor, or additional time. The gain-boosting, feed-saving benefits of 'Stilbosol' are automatically yours . . . as you feed.

**How to get the most from stilbestrol feeding.** Use 'Stilbosol'-fortified supplements for all steers and market heifers. Use 'Stilbosol' full time until you market your cattle. 'Stilbosol' will help make more beef at less cost every day you use it in your cattle rations.

ELI LILLY AND COMPANY, AGRICULTURAL AND INDUSTRIAL

# 'Stilbosol' widens feeding margins




## *"Margin" is the lifeblood of these feeders*

**Claude and Bill Van Hoozer, St. Joseph, Mo.** (above). "We've fed at least 8,000 head on 'Stilbosol'-fortified rations, and they've made a big difference in our daily gain and cost of gain. 'Stilbosol' is profitable to use. We wouldn't operate without it in our feeds."

**Roy and Jack Owens, Greenfield, Ill.** (above). "We used to think daily gains of 2 to 2¼ lbs. were real good. Now, rations with 'Stilbosol' give us better gains and cut cost of gain around 4 to 5 cents. Also, the cattle are quieter and stay on feed."

**Lloyd F. Nelson, Boone, Iowa** (below). "Based on my experience, 'Stilbosol' often makes the difference between profit and loss when margins are thin. I've fed cattle for 30 years, but I'd hate to do without 'Stilbosol' now. It gives us between ¼ and ½ lb. extra gain, cuts feeding cost about 10-15%." These steers put on 3.5 lbs. per day while on 'Stilbosol' rations.

**Ronald and Virgil Mullis, Clare, Ill.** (below). "Before 'Stilbosol' feeds were available, it was good to get over 2 lbs. daily gain. Now we figure ¾ lb. extra gain with 'Stilbosol' in our ration. We can't see how any man can afford to feed without 'Stilbosol' these days," says father-and-son feeder team. Like all feeders, *margin* is their "lifeblood."

**Stilbosol**
(Diethylstilbestrol Premix, Lilly)

'Stilbosol' is Eli Lilly and Company's trademark for Diethylstilbestrol Premix which is manufactured and sold under exclusive license granted by Iowa State College Research Foundation, Inc., under its U. S. Patent No. 2751303.

MAKERS OF 'HYGROMIX' (*S. hygroscopicus* Fermentation Products, Lilly)
Procaine-Penicillin-G • Vitamin B-12

PRODUCTS DIVISION, INDIANAPOLIS 6, INDIANA

Lilly

## Grain, Feed Group Holds Meeting in North Carolina

GOLDSBORO, N.C.—Members of the North Carolina Grain & Feed Dealers Assn. meeting recently in Goldsboro were told by the association president that margins in the grain business are lower and lower each year, and that therefore grain must be handled at the lowest possible cost per unit.

Loy Ledbetter emphasized also that "to get more into the grain and feed business, to grow and be more profitable, we must be good managers, give good service and be more efficient."

He urged strengthening of the association through its activities, responsibilities and membership.

Another speaker, Wayne Corpening, Wachovia Bank, Winston-Salem, N.C., pointed out to the group that North Carolina agriculture is shifting from a crop economy to a livestock economy, that the state is one of 12 that has recently increased its livestock population. He also commented on the growing trend toward specialization among the state's farmers.

Mr. Corpening called North Carolina the most progressive agricultural state in the Southeast.

His discussion centered around the role of banks in the agricultural growth of the state.

**Integration**

Dr. William L. Turner, extension farm management specialist at North Carolina State College, said that contract farming is one of the links in the chain in agricultural production, handling and marketing. He reported that contract farming is coming into the picture because of the natural results of the change of environment in agriculture. Farming, he said, is changing from a way of life to a way of making a living—from a business based on art to one based on science.

Dr. Turner mentioned that there has been a big change in the state's feed industry during the past 10 years, as the broiler industry has grown about 55% a year during this period. He predicted that animal agriculture will continue to grow.

Also on the program was a panel discussion on "Grain and Feed Business." Topics covered were equipment, grain, feed, oil seed, financing and contract farming. Panel members were: James Kelly, Aeroglide Corp., Raleigh; T. C. Flood, Eastern Carolina Feed & Seed Co., Elizabeth City; Dennis Ramsey, Ramsey Feed Co., Rose Hill; J. T. Wright, Buckeye Cellulose Corp., Raleigh; Mr. Corpening and Mr. Turner.

The North Carolina association now has 72 members and 26 associate members.

O. W. Faison is secretary-treasurer.

Curt Kenyon

**NEW APPOINTMENT — The Seedburo Equipment Co., Chicago, has appointed Curt Kenyon as manager of Steinlite Moisture Tester sales. For the past six years Mr. Kenyon has worked in the agricultural chemicals division of Dow Chemical Co. Before that he worked in the soil survey department of the University of Illinois agricultural extension program. He is a graduate of the University of Illinois. The announcement was made by Rex E. Yocum, Seedburo president.**

## Mississippi Reports Poultry Developments

FOREST, MISS.—New poultry industry developments in this area have been announced recently.

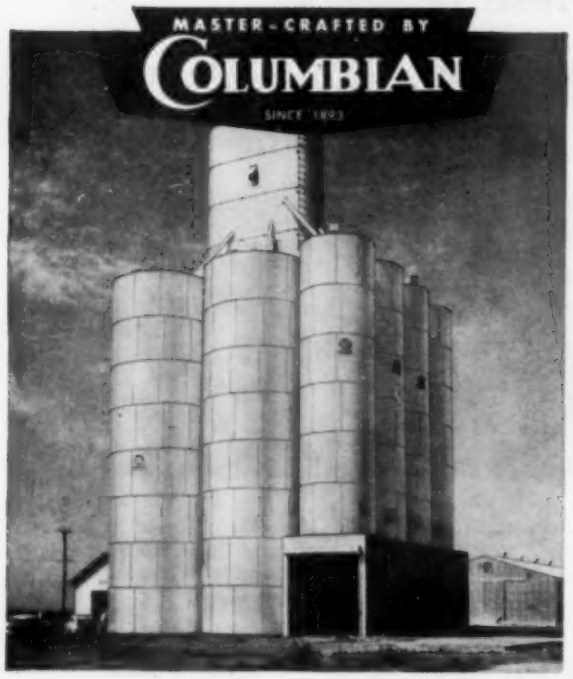
Red Hat Broiler Supply Co., Forest, is making plans to increase production by 100,000 birds by Jan. 1. The expansion is to be made chiefly on feed-conversion contracts with growers, according to reports.

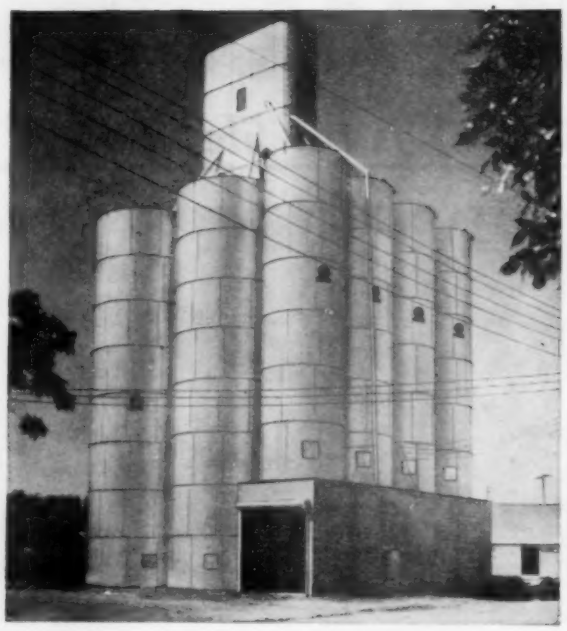
A. W. Roberts' new hatchery at Pineville will have a capacity of 20,000 weekly, and the B&H Hatchery hopes to increase production by Jan. 1 from its present output of 35,000 to 40,000 weekly to a new figure of 40,000 to 45,000.

Other developments include a plan by Payne's Hatchery, which has units at Forest, Morton and Carthage, to move the Morton unit to Forest and establish a central office there. Each of the hatcheries has a capacity of 50,000. The Forest building will be enlarged to accommodate the extra hatchery and office.


# YOU Are NOT Seeing Double!

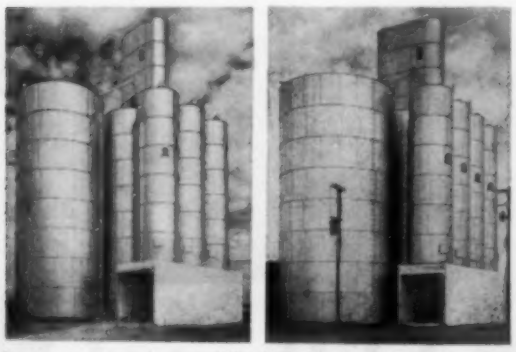
**Both These Modern Grain Plants in Byron, Nebraska are BOLTED STEEL ELEVATORS**



Almost identical are these two modern 96 ft. high Columbian Steel Elevators built by Jones Construction Co. of Grant, Neb. for Byron Grain Co. and Byron Co-operative Elevator. Each is 75,000 bu. capacity, each has four blending and classifying tanks over a drive-through loading and unloading dock. Grain is dumped into a pit under the dock, moved fast to storage tanks. Legs are large for fast handling of grain. The basic design makes a very flexible house.

**DOUBLE PROOF** that Columbian "Look Ahead" Elevators give you *extra Dollar Capacity* with Faster Grain Handling . . . Classifying and Blending facilities . . . Low Cost Expansion!



Two more examples of Columbian "Look Ahead" Elevators. *Left*, Burlington Elevator, provides 115,000 bu. capacity, at Hebron, Nebr.; *Right*, Riverdale Grain Co. elevator was built for 64,000 bu. In 1956, expanded to 107,000 bu. capacity in 1957. Both were built by Jones Construction Co., Grant, Nebr.

**Throughout the Grain Belt,** as in little Byron, Nebr., you'll find this same practical and efficient basic design of Columbian bolted steel elevators. It is duplicated over and over again. In large or small capacities, it includes both storage and blending and classifying tanks arranged for fast handling of grain. It offers maximum service to elevator customers, provides extra "dollar capacity" for the elevator operator, keeps him ahead of competition. Easily expandable, too—an important feature because a modern plant does bring in increased business. Low in first cost, this basic Columbian elevator is economical in use, as it is virtually a one-man operation

You can gain by the proved experience of Columbian contractors and engineers. Let them help plan *your* new elevator or expansion and modernization of your present facilities. **Write for free Columbian Grain Tank folder.** It shows you why Columbian engineering, design and construction can do more for you, for less.

**COLUMBIAN STEEL TANK CO.**

P. O. Box 4048- R Kansas City, Mo.

*Associate member, Grain & Feed Dealers National Association • Member, American Dehydrators Association*

*STEEL, Master-Crafted by Columbian . . . First for Lasting Strength*



# BOWMAN PRODUCTS

**VIANOL**
Oil soluble vitamin protector and pigmentation aid.

**BoA-S and Bo-A**
Stable dry vitamin A products.

**BoDEE**
Vitamin D-2 or D-3 in dry, oil or water dispersible forms.

**BoDEE (Mineral) STABLE VITAMINS D**
Vitamin D that will not decompose when combined with minerals.

**XANTHOPHYLL CONCENTRATES**
For better poultry pigmentation.

**HYDROPOID**
Dry, free-flowing partially hydrogenated animal fat.

**CLOROFOLEN**
Effective dog food deodorant.

**Bowman Feed Products, Inc.**
*130 Central Ave., HOLLAND, MICH.*

ONLY DAFFIN HAS . . .

# Q·C·H

QUICK CUSTOMER HARVEST

FOR NEW DAFFIN FEEDMOBILE OWNERS

## MERCHANDISING HELP worth $5.00 for each new customer of your Mobile Mill Service.

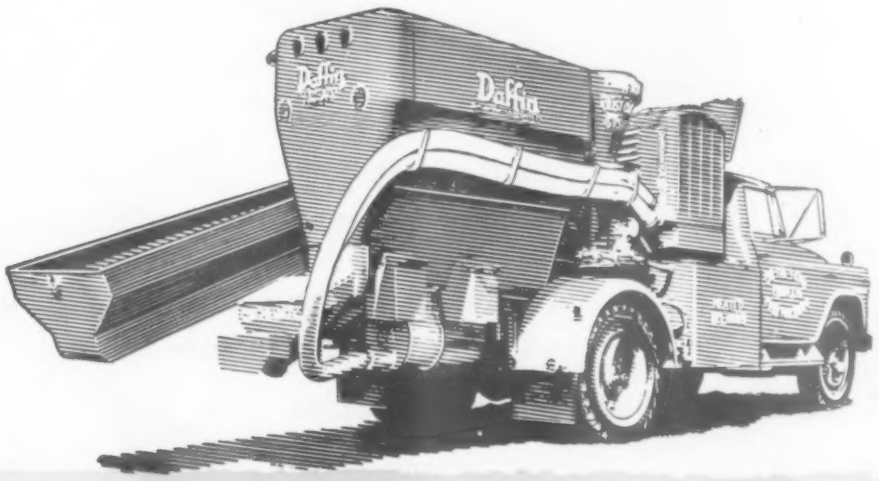
**Q. C. H. (Quick Customer Harvest) Plan is another Daffin "PLUS".**

**HOW IT WORKS:** Daffin will award you additional Business Building help equivalent to $5.00 for each new customer obtained with your new Feedmobile during your first 120 days of ownership!

**WHO IS ELIGIBLE:** YOU . . . by taking delivery of a new Daffin Feedmobile between now and December 31, 1958.

The Q. C. H. Plan is devised to help you develop a profitable on-the-farm feed service QUICKLY. It can be used for free demonstrations, to introduce your brand of feed concentrates, to promote the sale of molasses, and in many other ways to attract new customers.

It is added to the Daffin training and merchandising program which has proved so successful with owners everywhere. Here is your best opportunity of the year . . . take advantage of it!

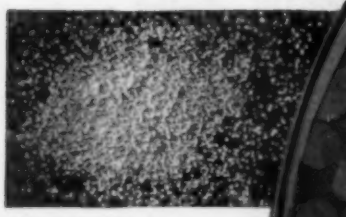



The new Daffin Feedmobile . . .
(with Labor Removed!)

*CALL, WRITE, WIRE TODAY!*

Daffin MANUFACTURING COMPANY
3267 NORTH PRINCE STREET, LANCASTER, PENNSYLVANIA

# *"Micro-Prilling" makes the difference!



Grace Micro-Prilled Urea Feed Compound shown *Actual Size.*

Micro-Prills shown *12 times actual size.* The smooth round balls flow freely, don't cake.

*"Micro-Prilling" an exclusive Grace Process, makes new **Grace Micro-Prilled Urea Feed Compound** far superior...

Here's why...

- ✔ Truly free-flowing.
- ✔ Blends easily in any standard mixing equipment.
- ✔ Assures an even, uniform mix throughout.
- ✔ Improved conditioner prevents caking.

**Write for Complete Details.**

**Grace Chemical Company**

*A Division of W. R. Grace & Co.*

**MEMPHIS, TENNESSEE**

**MEMPHIS**—Home Federal Bldg., JAckson 7-1551 • **CHICAGO**—75 E. Wacker, FRanklin 2-6424
**TAMPA**—2808 S. MacDill Ave., 82-3531 • **NEW YORK**—7 Hanover Square, Digby 4-1200

**MINNESOTA CONFERENCE—Here are some of the participants in the program at the recent Animal Nutrition and Health Short Course at the University of Minnesota. Left to right are: Dr. L. E. Hanson, head of the Minnesota animal husbandry department; Dr. E. L. Johnson, poultry department head; Dr. H. R. Bird, poultry department chairman at the University of Wisconsin, and Dr. Paul E. Waibel, poultry nutritionist at Minnesota.**

## Stronger Broiler Sales Drives Recommended

CHICAGO—Stronger industry sales campaigns and extensive research in merchandising techniques have been recommended as two ways in which the broiler industry can help retailers move increased supplies of chicken at better prices.

These recommendations were made by representatives of five major retail groups at the first meeting of the newly-formed retailer advisory committee of the National Broiler Council, held recently at the Conrad Hilton Hotel, Chicago.

The meeting of the retailers and industry members was called by Joe Fechtel, Dallas, Texas, council president, for the purpose of discussing mutual problems of selling the ever-increasing production of broilers, estimated this year at 15% over 1957.

Mr. Fechtel said the industry's number one problem is that it has a good product which is commanding a lower price than is warranted by its comparable food value. One cause of these low prices, he said, is that broilers are advertised only on special at a low price once every three or four weeks. At other times, prices are out of line.

In defense of the special sales, Joe Mueller, National Tea, pointed out special sales on broilers increase movement, and do not hurt "normal" volume. Broiler business will increase as much as four to five times in a sales week, but will maintain normal volume in the weeks preceding and following special sales, he said.

Bill Tattin, Independent Grocers Assn., backed up this point of view and stated that broiler sales are becoming noticeable in stealing sales from other meats.

The committee discussed methods of selling broilers, and the consensus was that the industry needs research on packaging, semi-cooking, and other methods of processing to give the consumer a greater convenience.

C. G. Bowes, merchandising consultant for the council, reviewed the work for the NBC in the retail field, and announced that a manual for retail use will be available this fall. The committee will act as an advisory board on the manual, with a meeting on this subject planned for sometime in October.

## Pelleted Cottonseed Hulls Fed Cattle

COLLEGE STATION, TEXAS — Steers fed pelleted cottonseed hulls as the principal roughage had an advantage in gain, carcass grade and financial return over those fed loose cottonseed hulls in a 140-day feeding test conducted at Texas Technological College, Lubbock.

The experiment was reported by W. L. Stangel, dean of agriculture at the college, N. C. Fine, head of the department of animal husbandry, T. S. Neff, graduate assistant, and J. H. Jones, Texas Agricultural Experiment Station.

Steers receiving diethylstilbestrol orally had the advantage in gain and carcass grade over those implanted with diethylstilbestrol. The implanted steers and the controls, which did not receive diethylstilbestrol, made nearly equal gain when the gains are based on a common yield. The control steers and those receiving diethylstilbestrol orally were equal in carcass grade and higher in carcass grade, respectively, than those which were implanted, according to the experiment report.

Gains and carcass grades favored the steers which received alfalfa hay as a supplement instead of added minerals and cottonseed meal and a vitamin A supplement.

*use* **MANAMAR** *products for faster gains and bigger profits*

This quartet can make "Sea Power" music that puts a jingle in your pocket. Simply supplement your poultry and livestock feeds with a ManAmar product! There's a "Sea Power" supplement for every purpose:

- MIXING MANAMAR
- CATTLE MANAMAR
- ALL-PURPOSE 40% MANAMAR
- SUPER NEPTUNE MINERAL CONCENTRATE
- FEEDSOL
- KORSOL
- FORTIFIED CONDENSED FISH SOLUBLES
- MANASOL
- MAXIMAR
- ALSOL
- MANAMAR 24%
- HORSE MANAMAR
- SOLUFAT
- NEPTUNE MINERAL CONCENTRATE
- MANAPERK

*For Further Data and Assistance in Formulations, write:*

**PHILIP R. PARK, INC.**

FEED ENGINEERS

*Manufacturers of* MANAMAR *"Sea Power" Supplements*

*Dept. F*

BERTH 42, OUTER HARBOR, SAN PEDRO, CALIFORNIA • 145 W. FIRST ST. DUBUQUE, IOWA

**Minnesota Linseed Meal**

Manufacturers and dealers everywhere use Minnesota Brand meal, pellets or grits. *Extra protein* sharpens appetites, boosts production. Wire, write or phone for latest quotes.

*There's a* **QUALITY DIFFERENCE**

**MINNESOTA LINSEED OIL COMPANY**

*25—44th Ave. N. E. • Minneapolis 21, Minn.*

SUNSET 8-9011

the new name in dehydrated alfalfa

MIDWEST

GREEN BANNER

DEHY

midwest alfalfa

KANSAS CITY 41, MISSOURI

P.O. Box 534 • HArrison 1-0732

# Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

## Ear, Shelled Corn Silage

Livestock producers planning to put up high-moisture ear corn or shelled corn as silage this fall should make sure they get an accurate moisture check first. To avoid spoilage, ear corn silage must contain at least 40-50% moisture, and there must be at least 30-35% moisture in shelled corn for silage.

These guides are offered by two University of Minnesota agronomists, William Hueg and Harley Otto. They suggest that to check the moisture closely, feeders should select a dozen typical ears out of the field, shell off the kernels, and take them to a local elevator for the moisture determination. Add 5% to the shelled corn level to get an idea of the moisture in the ear corn.

Water must be added if moisture levels are below those recommended by the agronomists. Twenty gallons per ton of silage will raise the moisture by about 5%.

They urge feeders to use a hammer or burr mill for ear corn or shelled corn silage that is to be fed to beef cattle. Feeder cattle will eat the silage better when it's finely ground. And the cobs and kernels in ear corn silage tend to separate when a stationary ensilage cutter is used. This leaves bunches of cobs which beef cattle won't eat well, so more spoilage results.

For dairy cattle, the specialists say the conventional chopper can be used on ear or shelled corn as an emergency measure. A small amount of spoilage won't bother the cows and they will eat the cobs with little difficulty. On most dairy farms, this silage should be fed up during the winter months.

Experience by Minnesota farmers, as well as the University of Illinois, shows that high-moisture ear or shelled corn can be successfully stored in conventional, concrete stave silos. But to keep spoilage down to a minimum, the Minnesota agronomists urge producers to line the inside of the silo doors with paper or plastic, and to cover the top with a plastic cap to eliminate surface spoilage.

**FALL PROMOTION—A fall promotion effort for Aureomycin Crumbles has been announced by American Cyanamid Co., N.Y.C. It features a floor display (shown in photo) which holds four bags of Crumbles, and which is offered free to animal health dealers who take advantage of this special promotion. Aureomycin chlortetracycline will also be promoted this fall for use with dairy cows. The Aureomycin mastitis products promotion is designed to tie in with promotion to consumers starting Nov. 1. As with Crumbles, dealers will be supplied with a free floor stand "merchandiser."**

## Protein in Corn Field

It will pay farmers to continue to feed protein supplement to hogs turned into corn fields this fall, according to Richard Hollandbeck and George Thrasher, Purdue University swine specialists.

Most hogs turned in corn fields are fairly large, causing some producers to ask whether they should feed protein supplement to these animals. A summary of 13 experients conducted throughout the Corn Belt indicates that supplement will pay dividends.

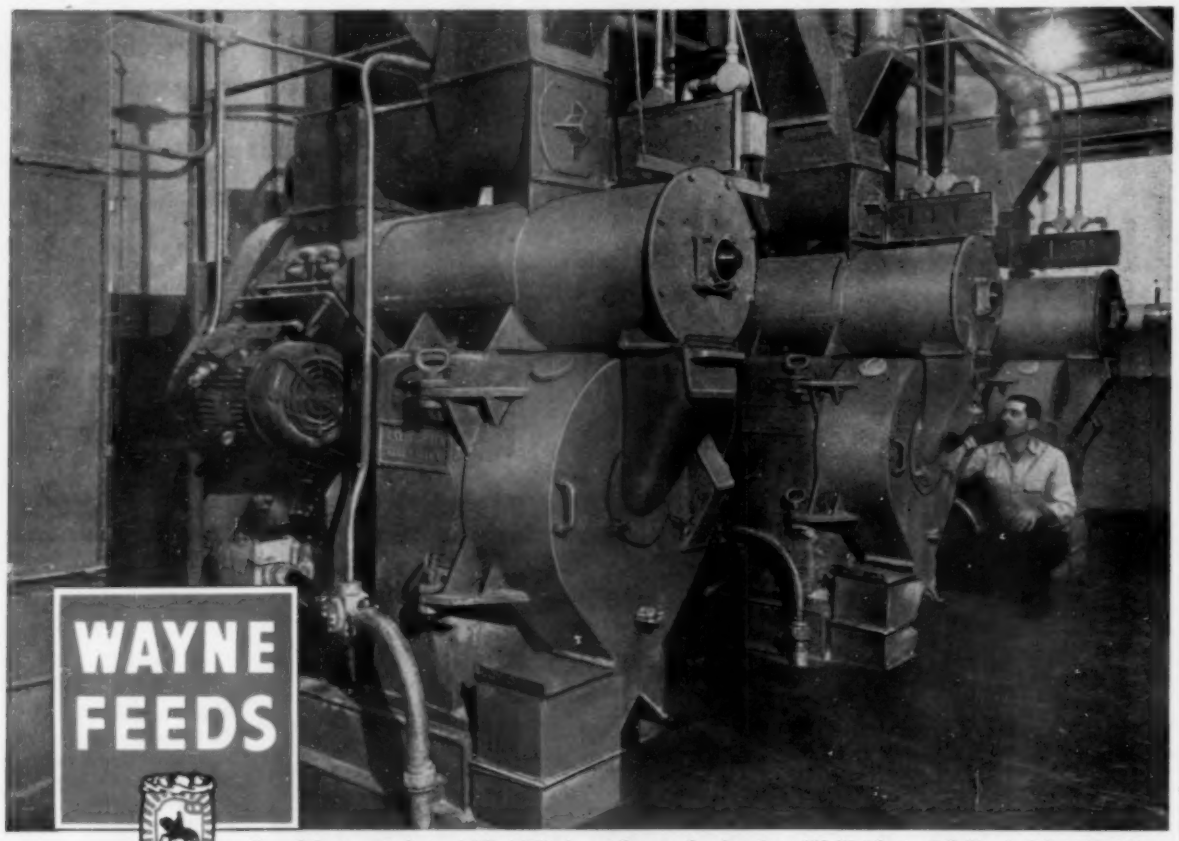
Here are some results obtained: Pigs receiving supplement gained ½ lb. more per head each day. Each bushel of corn produced 4.5 lb. more pork when supplement was fed. Each pound of supplement saved 6.4 lb. of corn.

## Goals for Dairymen

There are nine "goals" dairymen should be thinking about crossing before they can reach "paydirt." At least, these are the goals seen by L. C. Cunningham, Cornell University dairy specialist, following his study of experiences of more than 1,000 farmers. Many New York state dairymen have crossed three or four of them, but few have reached all nine, he reports.

To qualify under this "coach's" rules, dairymen should strive for:

1. At least 40 cows.
2. Three to three and one-half crop acres per cow.
3. At least two tons of hay per acre.
4. No less than twelve tons of corn silage per acre.
5. Harvest five to six tons of hay per cow.
6. Sell 9,000 lb. of milk or more from each cow.
7. Spend no more than 25% of the milk check for feed.
8. Spend no more than $100 per cow on power and machinery.
9. Sell at least 200,000 lb. of milk for each man working on the farm.




One of the newest plants of Allied Mills, Inc. at Everson, Pa., has three 100 HP "Century" California Pellet Mills. Nine out of 14 Allied feed plants now operate a total of 30 CPM Pellet Mills, plus a number of CPM Coolers and Crumblers.

"USE-EXPERIENCE"

*. . . another reason why more CALIFORNIA Pellet Mills are sold today than all other makes combined!*

When present users of California Pellet Mills expand, or build new mills, records show that almost without exception they specify CPM's.

Allied Mills, for example, bought their first CPM in 1934. Today they have 30 CPM units in use. It's the same story with other big pellet feed producers everywhere. And with hundreds of smaller feed manufacturers in every area.

This outstanding preference is based on "use-experience" which proves that a CPM does everything claimed for it and more! It is the strongest possible endorsement of CPM performance in continuously producing *more pellets per horsepower . . . of highest quality . . . at lowest cost per ton!*

To take full advantage of the fast-expanding market for pelleted feeds, it will pay you to follow the leaders who make CPM's their first choice; and who continue to order when new equipment is needed.

There is *one* California Pellet Mill that *best* fits your needs. Let CPM research, experience and knowhow as *pioneers* help you select it. Write for full information or call your nearest CPM representative.

CPM CALIFORNIA PELLET MILLS

California Pellet Mill Company
1800 Folsom St., San Francisco 3, California
1114 E. Wabash Ave., Crawfordsville, Indiana
101 E. 15th Ave., North Kansas City 16, Missouri

Sales & Service Representatives also in: Albany · Atlanta · Columbus · Davenport · Denver · Fort Worth · Los Angeles · Minneapolis · Oklahoma City · Omaha · Richmond · Seattle · St. Louis

ONLY CPM MAKES A COMPLETE LINE OF PELLET MILLS

# "Feed has long been an important part of our business and we are aggressively moving ahead,"

says **DONOLD B. LOURIE,** *President of The Quaker Oats Company, in this report to Ful-O-Pep Feed Dealers*

*DONOLD B. LOURIE started 36 years ago in the Cedar Rapids plant of The Quaker Oats Company. He has been president since 1947. A former director of the American Feed Manufacturers Association, he has long been identified with the feed business.*

"I suppose it would surprise many of you to know that Quaker's interest in feed goes 'way back to 1885. 'COB' was the name that the enterprising founder of our company gave to his new animal feed mixture of Corn, Oats and Barley. Crude though it was, 'COB' made our company one of America's pioneers in the feed industry.

"Such an early interest in feed led The Quaker Oats Company to join five other companies in founding the American Feed Manufacturers Association in 1909. We began to pioneer in new feeding plans and new feed ingredients.

"Always moving ahead, especially in research, we established our first research farm 35 years ago. Now greatly enlarged, it is the oldest continuously operated research center of any commercial feed manufacturer. Today we operate two modern research farms.

"Recently we greatly expanded our research when we built a new complete nutritional laboratory. It is equipped with the finest facilities of their type in the country today. In addition, we maintain quality control facilities at our mills. Guesswork is eliminated in Ful-O-Pep Feeds.

"We know that to be successful in the growing feed business we must continue to be in a position of leadership. Our aggressive efforts to improve our feeds continue. Feed is important to our business. Ful-O-Pep is one of the largest operating divisions of The Quaker Oats Company.

"More opportunity than ever is open to you and to us in today's three and a half billion dollar feed industry. Radical changes in the nation's farm economy—larger, more specialized farms—are creating heavier demands for feeds. We are gearing up to these demands by expanding our facilities, increasing the efficiency of our feeds and by lowering production costs. We believe in the feed business.

"Whether you are one of our veteran Ful-O-Pep Dealers or have just recently joined us, our future together in the feed business should be rewarding."

Donold B Lourie

**FUL-O-PEP FEEDS**

*made by The Quaker Oats Company*

We urge Feed Dealers to visit our modern Feed Mills located at: Cedar Rapids, Ia. Memphis, Tenn. • St. Joseph, Mo. • Sherman, Tex. • Shiremanstown, Pa. • Lawrenceburg, Ind. • Chattanooga, Tenn. • Tampa, Fla. • Asheville, N. C. • Jasper, Ala.

# Minnesota Swine Scientists Report Protein, Additive Tests

ST. PAUL—What effects do different protein levels in the ration have upon the performance and carcass quality of swine? Reports on studies of this question were one of the highlights of the recent Swine Feeders Day at the University of Minnesota.

Several reports on tests with various feed additives also were a part of the presentation of information on results of 1957-58 research.

In general, said the Minnesota livestock scientists, exceptionally high levels of protein are no help either in improving carcass quality or in speeding up growth of growing-finishing swine. They indicated that feeding 15% protein until pigs weigh about 100 lb. and 12% from then on is enough.

In reports from four branch experiment stations, researchers told of studies on effect of different protein levels, method of feeding and method of preparation of the corn component of the ration upon performance of swine of specific breeding groups.

### Carcass Quality

All but one station reported no effect of protein differences on carcass quality; they agreed that the "intermediate" levels gave as fast and efficient growth as higher protein levels.

Ralph Grant of the Northeast Experiment Station, Duluth, said tests showed pigs fed rations containing the 15-12% protein gained somewhat faster and with better feed efficiency than did those on the 13-10% protein system. He reported that 18-15% protein feeding showed no advantage over the 15-12% program.

Harley Hanke of the West Central station at Morris told of a test where four lots of 30 pigs each were used to study the influence of protein content and method of feeding upon performance and some aspects of carcass quality. Pigs fed complete mixtures received rations containing 18-15, 16-13 and 13-10% protein. Rations of 18-15 and 16-13% protein caused more rapid, but not more efficient, gains than 13-10% protein in these tests, but there was no difference between the intermediate and high levels of protein in rate of gain. Performance of pigs self-fed ground yellow corn and a soybean meal type of protein supplement equalled or surpassed that of all other test groups. Neither protein content nor feeding method had any marked effect on carcass quality as measured by backfat thickness and dressing percentage.

From the Southern Experiment Station, Waseca, Kenneth Miller said protein content caused no differences in rate of gain or backfat thickness, based on the same kind of corn. Pigs fed ground ear corn rations throughout the experiment had slightly less backfat at slaughter than did pigs fed a ground shelled corn ration. The slight reduction may have been because the pigs gained more slowly.

A. B. Salmela, North Central Experiment Station, Grand Rapids, said that feeding rations containing a low protein level (14-10%) reduced rate of gain and efficiency of feed utilization. The high-protein level (18-15%) and the intermediate level (16-13%) produced equal feed lot performance. Mr. Salmela said that higher protein levels for all pigs did produce higher percentages of the four lean cuts. The tests involved three different crosses of Minnesota hog breeds, and the results suggest higher protein requirements for these particular pigs. However, data from the barrows alone showed no effect of level of protein on backfat thickness, percentage of the four lean cuts, or dressing percentage.

R. J. Meade, and associates, St. Paul, studied methods of improving a nutritionally adequate corn-soybean meal ration. Pigs were fed 16% protein until they averaged 100 lb. and 14% thereafter. The substitution of 6 and 4.5% of tankage, 5% of dried whole whey or 3% of fish meal for a portion of the soy failed to cause any marked improvement in pig performance as measured by daily gain and feed efficiency, Dr. Meade said.

### Feed Additives

Further investigations of antibiotics, combinations of antibiotics and other antibacterial agents for swine fed in drylot were conducted by Dr. Meade, L. E. Hanson and R. M. Prouty. In one experiment, they reported, antibiotic additions resulted in increases of from 3 to 11% in rate of gain. There was no improvement in feed efficiency. Combinations of procaine penicillin and streptomycin, and streptomycin and sulfaquinoxaline, were said to be as effective as chlortetracycline and oxytetracycline in promoting gains.

The research included a study of the effect of hygromycin as a growth promotant and on feed efficiency; no attempt was made to study the material's effect on removal of parasites. The researchers said addition of hygromycin to the rations of growing-finishing swine in this test resulted in a depression in average daily gain, believed to be due to a depression in feed intake because of lack of ration palatability. Presence of an antibiotic or combination of antibiotics, either of which was effective when used alone, in rations containing hygromycin failed to overcome the "depressing" effect due to this material.

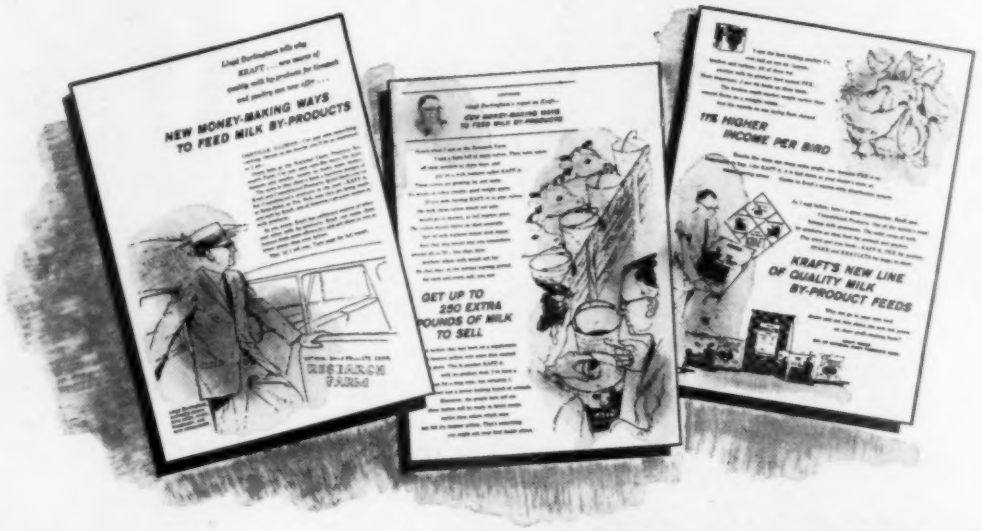
### Thyroxine Studied

Two experiments were conducted to study the influence of thyroxine upon farrowing and lactation performance of sows and gilts. In the first study with small numbers of animals, addition of thyroxine to the sow's ration resulted in slight increases in 35-day weights of the pigs. In a second experiment, with larger numbers of animals, the feeding of the hormone did not affect 35-day weights of the pigs. Feeding


VITAMINS
PRECISION BUILT FOR PRECISION NEEDS
VITINC
VITAMINS, INC.
BASIC MATERIAL MANUFACTURERS
and HEADQUARTERS FOR
TECHNICAL INFORMATION
Write or Wire Your Requirements
VITAMINS, INC.
809 W. 58th Street, Chicago 21, Ill.



NEW THIS FALL FROM KRAFT


NEW MONEY-MAKING WAYS TO FEED MILK BY-PRODUCTS
GET UP TO 250 EXTRA POUNDS OF MILK TO SELL
17% HIGHER INCOME PER BIRD
KRAFT'S NEW LINE OF QUALITY MILK BY-PRODUCT FEEDS

18 MILLION TO HELP

* Over 6 million sales messages in print every month!
* Featuring Lloyd Burlingham, America's top farm news analyst working for you!
* 87 big ads concentrated in September, October, November . . . more to come.

THESE PROFIT-MAKING PRODUCTS NOW MADE AND SOLD BY KRAFT

thyroxine did not reduce feed consumption by the sows, nor did it cause increased weight losses during lactation. Pigs nursing sows fed rations containing thyroxine consumed slightly less pig starter, and there was an increase in the total amount of feed required per 100 lb. net gain of sows and pigs for these groups.

Dr. Meade also reported a study of the influence of thyroid-active compounds—iodinated protein, thyroxine (the thyroid hormone) or triiodothyronine—on gain and feed efficiency. Addition of these materials resulted in slight to moderate (2 to 8%) increases in average daily gain. Use of higher levels of thyroxine and triiodothyronine resulted in increases in feed required per cwt. of gain. This increase with the higher levels may be the result of an increase in rate of metabolic activity. The pigs fed rations with higher levels did not appear to be more nervous or active than other groups. It is possible that lower levels of these two compounds might have the effect of increasing rate of gain as well as improving of feed utilization.

Another experiment reported was on the effect of antibiotics and arsanilic acid in pig starters on the performance of suckling pigs. The pigs nursed the sows until weaned at 35 days. This approach was adopted because it appears that more producers are weaning their pigs at younger ages (5 to 6 weeks) but are not yet weaning at 2 to 3 weeks of age. Treatments included 40 gm. chlortetracycline per ton; 10 gm. procaine penicillin and 30 gm. streptomycin; 30 gm. zinc bacitracin and 10 gm. procaine penicillin; 90 gm. arsanilic acid.

The researchers said performance of all pigs was quite satisfactory, and none of the antibiotics or arsanilic acid affected pig gains during the period between 14 and 35 days of age. Addition of either chlortetracycline or a mixture of penicillin and streptomycin to the starter resulted in an 11% increase in rate of gain after the pigs were weaned at 35 days and until they completed the test at 56 days of age. All of the lots of pigs gained very efficiently and the additives had no material effect on feed efficiency.

A. B. Salmela and associates reported on a study of the influence of hygromycin additions to rations of growing-finishing swine being fed on good brome-alfalfa pasture. Some of the pigs received hygromycin prior to weaning and some did not. The researchers said: "Although very small differences resulted within and between replicates in average daily gain of pigs fed this material in the growing-finishing ration, the average benefit in daily gains due to its addition was negligible. Likewise, no improvement in efficiency of feed utilization resulted from including hygromycin in the rations."

### Barley Rations

D. Reimer and associates reported on the first of a series of experiments at the Crookston station to be conducted in an attempt to develop improved barley rations for swine. Eight lots of 14 pigs each were fed to compare a formula based on corn with four others based on barley. Of the barley formulas, three were fed as meals and also as pellets.

The corn formula produced the most rapid and efficient gains. Soybean meal and torula yeast were equally effective as supplements to a barley ration. A mixture of soybean oil meal and torula yeast (50% of each) was no more effective than either fed singly. Pelleting of the barley formulas reduced the feed requirement per 100 lb. of gain an average of 52 lb.

Dr. Meade and associates told of an experiment on the value of injectable iron and of "copperas" in preventing nutritional anemia in suckling pigs. One purpose of the work was to determine whether the injection of an additional amount of iron-dextran compound at three weeks of age (after a first injection at 3 or 4 days of age) would aid in maintaining higher hemoglobin levels as well as result in heavier weights of pigs nursing their dams to 35 days of age.

The researchers said the injectable iron compound maintained blood hemoglobin at a high level until the pigs were three weeks of age. When they did not receive supplemental injectable iron at three weeks, the hemoglobin level declined 21% during the next 14-day period. The hemoglobin level of pigs injected with 1 c.c. of injectable iron declined only 6% during the 14-day period following injection, while that of pigs getting 2 c.c. increased by 3%. Pigs injected with either amount of supplemental injectable iron were 1 lb. or 5% heavier at 35 days of age. Some of the pigs not injected with supplemental iron at 21 days showed rough hair coats, listlessness and a mild diarrhea.

Swabbing of the sow's udder with a saturated copperas solution (crude ferrous sulfate) was also reported effective in maintaining satisfactory hemoglobin levels.

## IBM MACHINE BOUGHT FOR DAIRY RECORDS

**ITHACA, N.Y.—A new electronic machine that can process records on 300,000 cows a month will be installed Nov. 15 at Cornell University. It pours out everything a dairy farmer needs to know about a cow at the rate of about 30 cows a minute.**

**Prof. H. Wilmot Carter, department of animal husbandry, said the IBM 650 will be used to conduct research, as well as to process Dairy Herd Improvement records. He said dairymen will get their records back a day or two earlier after the machine is installed.**

**Processing of dairy records on such a machine was started at Cornell in October, 1956. However, the machine, located in another part of the university, is used for other things besides dairy records. Prof. Carter said an increased work load prompted getting the new machine.**

### NEW WAREHOUSE

SACRAMENTO, CAL.—Rio Bonito Farms is constructing a new grain storage warehouse here. Located in west Sacramento, the new structure is expected to cost $80,000.

PEX CAN HELP WARD OFF BROILER PROBLEMS IN YOUR FLOCK
"BROILERS FED ON PEX GRADE BETTER, SELL BETTER AND TASTE BETTER"
NEW IMPROVED KAFF-A LOOKS LIKE THE BEST MILK REPLACER YET
HOW PEX PAYS OFF FROM POULT TO PLATTER
BIGGEST-SELLING RESULTS FROM KRAFT'S MILK BY-PRODUCT FEEDS
"8 LESS TO FEED TO 8 WEEKS"
"WE ARE SOLD ON PEX"
"I SAW THE RECORD . . . 71¢ HIGHER INCOME PER BIRD ON PEX MILK BY-PRODUCT FEED BLOCK"
KRAFT

# "SALES-TALKS" YOU SELL

* Running in 25 different dairy, poultry and general farm publications.
* Distinctive ads—telling your customers the profit-story of KAFF-A and PEX!
* Biggest ad campaign ever put behind these popular products!

*Feed dealers who tie in to this program will increase their volume and net. Contact your nearest Kraft Branch or write to:*

AGRICULTURAL DEPARTMENT
KRAFT FOODS
DIV. OF NATIONAL DAIRY PRODUCTS CORP.
CHICAGO, ILLINOIS

*WHAT'S NEW IN FEEDING?*

# Putting Research to Work

By Spencer H. Morrison, Ph.D., D.V.M.

## Effect of Enzyme Supplementation of Milk Replacers on the Growth of Calves

● G. F. Fries, C. A. Lassiter and C. F. Huffman, Michigan State University; Journal of Dairy Science, Vol. 41, August, 1958, pages 1081-1087.

ABSTRACT

Two experiments were conducted to determine the value of the addition of certain enzymes to milk replacers for calves.

In the first experiment with 24 calves in a 2x2 factorial design, a vegetable soybean flour - corn - whey replacer was daily mixed with water (4 parts), and predigested with 1% diastase and/or 0.2% papain for 12 hours at 40° Cent. The calves did not receive any hay throughout the trial, and consumed 55 lb. of whole milk through the 20th day and 30.5 lb. of the treated milk replacer by the 40th day. No milk or milk replacer was fed after the 40th day, and the trial was terminated at 60 days of age. The group which received the papain alone was considerably lower at 40 days of age in rate of daily gain than the other groups, and two of the calves in this group died before the end of the experiment. There was no difference between the growth of the surviving animals and the other groups during the 40 to 60 day period.

Three different types of milk replacers were fed with and without 0.5% pepsin in a 3x2 factorial design with 36 calves in the second trial. The milk replacers were not predigested and the calves were all offered good quality second-cutting alfalfa hay and an 18% vegetable protein starter ad lib after seven days of age throughout the 60-day period. The three milk replacers used were of the soybean flour-corn, soybean flour-cerelose, or skim milk-cerelose types. Pepsin did not influence growth with any of the milk replacers used. The best daily gains were produced by the skim milk-cerelose milk replacer.

**COMMENT**

Pepsin additions are becoming fairly common by feed manufacturers to pig pre-starters and creep feeds, although many consider the subject controversial. It is logical to assume that if pigs will benefit from enzyme additions, calves will do so also—that this is not so is apparent from the Michigan report.

It is somewhat surprising and disconcerting to discover that the Michigan workers did not review or discuss the earlier findings of the Iowa group in this field. (Ratcliff, Jacobson and Catron, 1956.) The Iowa workers added a combination of both animal diastase and pepsin to both gruel type and dry type rations for young calves for 16 weeks. A slight but non-significant depression in weight was observed when the enzymes were added to the diet. Earlier work by other workers indicates also that certain enzymes are not beneficial in dairy calf diets. (Knodt and Williams, 1951; Dollar and Porter, 1957.)

●

## Effect of a Live Yeast Culture and Trimethylalkylammonium Stearate on the Performance of Milking Cows

● C. A. Lassiter, C. F. Huffman and C. W. Duncan, Michigan State University; Journal of Dairy Science, Vol. 41, August, 1958, pages 1077-1080.

ABSTRACT

Fifteen lactating Holstein cows were divided into five groups of three each comparable on a basis of average daily milk production, body weight and stage of lactation. Within each group of three cows, the experimental rations were fed in a Latin-square 3x3 design. All cows were changed to new rations every 30 days. The rate of roughage feeding was maintained at 30 lb. good quality alfalfa hay daily throughout the experiment, while the grain feeding was based upon milk production and quality of roughage.

The experimental rations used were:

1. Control—1,660 lb. ground yellow corn, 300 soybean oil meal, 20 di-

Successful Feeders know about "NITROGEN RETENTION"

**Animal nutritionists** determine "nitrogen retention" by livestock so as to have an exact measure of their efficiency in producing protein. This scientific calculation tells how much of the nitrogen from feedstuffs is retained in the body instead of being excreted.

With cattle and sheep, good nitrogen retention and good digestion of fiber from roughage are both important to efficient, low-cost meat or milk production. Feed manufacturers who use PROCADIAN® Urea find that this concentrated nitrogen source of protein in mixed feeds helps build feed efficiency and economy.

The nitrogen of PROCADIAN Urea is quickly available to the rumen bacteria and protozoa that do most of the work of feed digestion for cattle and sheep. Highly concentrated, it leaves room in the feed bag for all the minerals, energy, vitamins and other nutrients needed by rumen micro-organisms to digest the fiber in roughages, and to produce protein efficiently.

Cattle and sheep have a natural advantage over other livestock in their capacity for roughage. Feeds scientifically formulated with PROCADIAN Urea increase this capacity substantially—giving livestockmen the most feed value, and the most meat and milk for their money. Use PROCADIAN Urea in *your* feeds and watch your market grow!

Nitrogen Division backs your modern feed formulation program with powerful advertising that tells your customers to "look for urea on the tag" in buying feed. It pays *you* to let customers know that you use PROCADIAN Urea!

**PROCADIAN® UREA**
**FEED MIXTURE**

*The quick source of protein in mixed feeds.*

Allied Chemical

**NITROGEN DIVISION**
40 Rector Street, New York 6, N. Y.
*Branch offices in leading farming areas.*

PROVED ON-THE-FARM
VICTOR FEEDS
THE CRETE MILLS
CRETE, NEBRASKA

IT'S Eye Appeal that really COUNTS and
GRAN-I-GRIT
Has Eye Appeal for Poultry of All Ages
NORTH CAROLINA GRANITE CORP.
MOUNT AIRY NORTH CAROLINA

ANOTHER BIG PLUS FOR Trithiadol

In Addition To Its 8 Other Major Advantages—

# Trithiadol

TRADEMARK

## Effectively Reduces Large Roundworm AND Tapeworm Burden IN CHICKENS

NOW TRITHIADOL, the only coccidiostat that both! (1) effectively controls all important species of coccidia and (2) gives top feed conversion . . . offers broiler growers a great EXTRA BONUS.

For carefully controlled laboratory tests and extensive field observations prove TRITHIADOL . . .

**effectively reduces large roundworm and tapeworm burden in chickens.**

Here at no extra cost is substantial aid in a management program for the control of worms. And TRITHIADOL gives this aid along with 8 other benefits. Learn Today How TRITHIADOL Can Give Your Flock Greater Protection . . . Can Give You Greater Poultry Profits!

• SEE YOUR STERWIN TECHNICALLY TRAINED REPRESENTATIVE OR WRITE, WIRE OR PHONE COLLECT, FOR FULL FACTS ON TRITHIADOL.

**ONLY TRITHIADOL HAS ALL 9 OF THESE MAJOR ADVANTAGES**

1. Effectively controls all economically important species of coccidia.
2. Completely safe for poultry; harmless to other warm blooded animals.
3. Superior feed conversion and weight gain.
4. Permits immunity to develop early.
5. Displays no adverse effects on egg production, shell or interior quality.
6. Comparatively no effect on hatchability or fertility.
7. Is compatible with all commonly used feed ingredients.
8. Stable, free flowing, easily blended with feeds.
9. Effectively reduces large roundworm and tapeworm burden.

STOCKS AVAILABLE FOR IMMEDIATE DELIVERY

Sterwin Chemicals INC.

Subsidiary of Sterling Drug Inc.

1450 Broadway, New York 18, N. Y.

LAckawanna 4-6400

**DOES ALL THREE JOBS AT ONCE**

*New* IOWA PORTABLE FEED UNIT

- GRINDS FEED
- MIXES FEED
- BLENDS FEED WITH MOLASSES

Unsurpassed for quality, low operating cost, low maintenance cost

SURPRISINGLY LOW PRICED!
WRITE TODAY FOR LITERATURE AND PRICES

**IOWA PORTABLE MILL CO.** OELWEIN, IOWA
"Since 1928, Best Built for On-The-Farm Service"

**KEES & COMPANY**
Processors of DRIED FISH SOLUBLE PRODUCTS
A "MUST" IN EVERY SWINE OR POULTRY RATION
*Call or write for complete information and price*
327 S. La Salle St., Chicago 4, Ill. Phone HArrison 7-1828

calcium phosphate, and 20 trace salt containing cobalt and iodine.

2. Live Yeast Culture — same as control, except 1% live yeast culture replaced 1% ground yellow corn.

3. Trimethylalkylammonium stearate (Dynafac)—same as control, except cows received 2 grams of Dynafac in addition per day.

Neither the live yeast culture nor Dynafac had any significant effect on the butterfat test or the production of 4% fat-corrected milk. However, both the yeast culture and Dynafac tended to increase the milk production (4% FCM) during the last 24 days of each period; but these improvements were not statistically significant. The improvement did not seem to exist during the last six days of each period—when the production of control cows was slightly higher than the other two groups. All cow groups gained weight on all rations, but the gain in weight was greater on the control ration than with the two additives. No differences were observed in physical health and general well-being of the cows, or in the acceptance of the rations.

A conventional metabolism trial was conducted with four dry cows and showed that the two additives decreased crude protein and ether extract digestibility, and nitrogen utilization. Dynafac tended to improve the crude fiber digestibility.

**COMMENT**

Yeast and live cell yeast cultures will furnish good quality protein, certain B-complex vitamins and certain "unidentified growth factors" to rations in which they are included. For poultry, and possibly swine, they may form an important part of the ration in which they are included if used in the manner in which the nutrient composition and economics dictate. However, even in such rations it is very doubtful whether they have any magical properties when compared with other rations of like nutrient composition.

Since ruminant animals have very little or no requirement for unidentified factors, yeast or live cell yeast cultures can only furnish protein of good quality and certain B-complex vitamins. The action of the microorganisms in the rumen usually precludes the possibility that yeast has any extra value. Most of the reports from colleges have shown little benefit from the addition of yeast or yeast cultures in the ration when compared with other diets properly balanced in nutrients. (Norton, 1945; Renz and Koch, 1956; Le Gendre et al., 1957; and Beeson, 1957, 1958). In certain cases with beef cattle, the addition of torula yeast has improved gains very slightly. (Burroughs and Culbertson, 1957; Beeson, 1952.)

In spite of the generally negative reports from colleges, including this recent one from Michigan with dairy cattle, many farmers and even small feed manufacturers are rather rabid believers in yeast and live cell yeast cultures, even in ruminant rations. Claims are made for these products that are simply astounding, such as: "helps cattle get on feed faster," "prevents bloat," "prevents shipping fever complex," "increases milk production," "aids digestion," and "prevents scouring." So far, no well-conducted research supports any of these claims. These materials are usually expensive, and it seems that their use is not indicated in most ruminant rations.

## Grain Firm Promotions

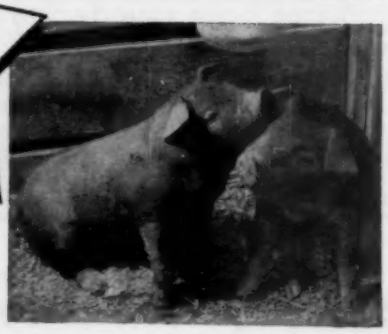
LOS ANGELES—Continental Grain Co. announces the appointment of Edwin Caswell, Jr., as merchandising manager of its southern California division, with headquarters in Los Angeles. A. L. Tuma, II, formerly with the grain division of Balfour, Guthrie & Co., Ltd., will serve as assistant merchandising manager. Don Harris remains as manager of the Los Angeles office.

**KAFIR & MILO**
*Largest Dealers in Southwest*
**MID-CONTINENT GRAIN CO.**
Board of Trade Victor 2-4071
KANSAS CITY, MO.

Midwest
FRESH
SWEET-DRIED WHOLE WHEY

THE FINEST QUALITY WHEY FOR CALF AND PIG FEEDS

UNIFORM
LOW ACIDITY
HIGH LEVEL OF LACTOSE*
LOW ASH



*The Natural Milk Sugar which is the Carbohydrate of choice for all Baby Animals.

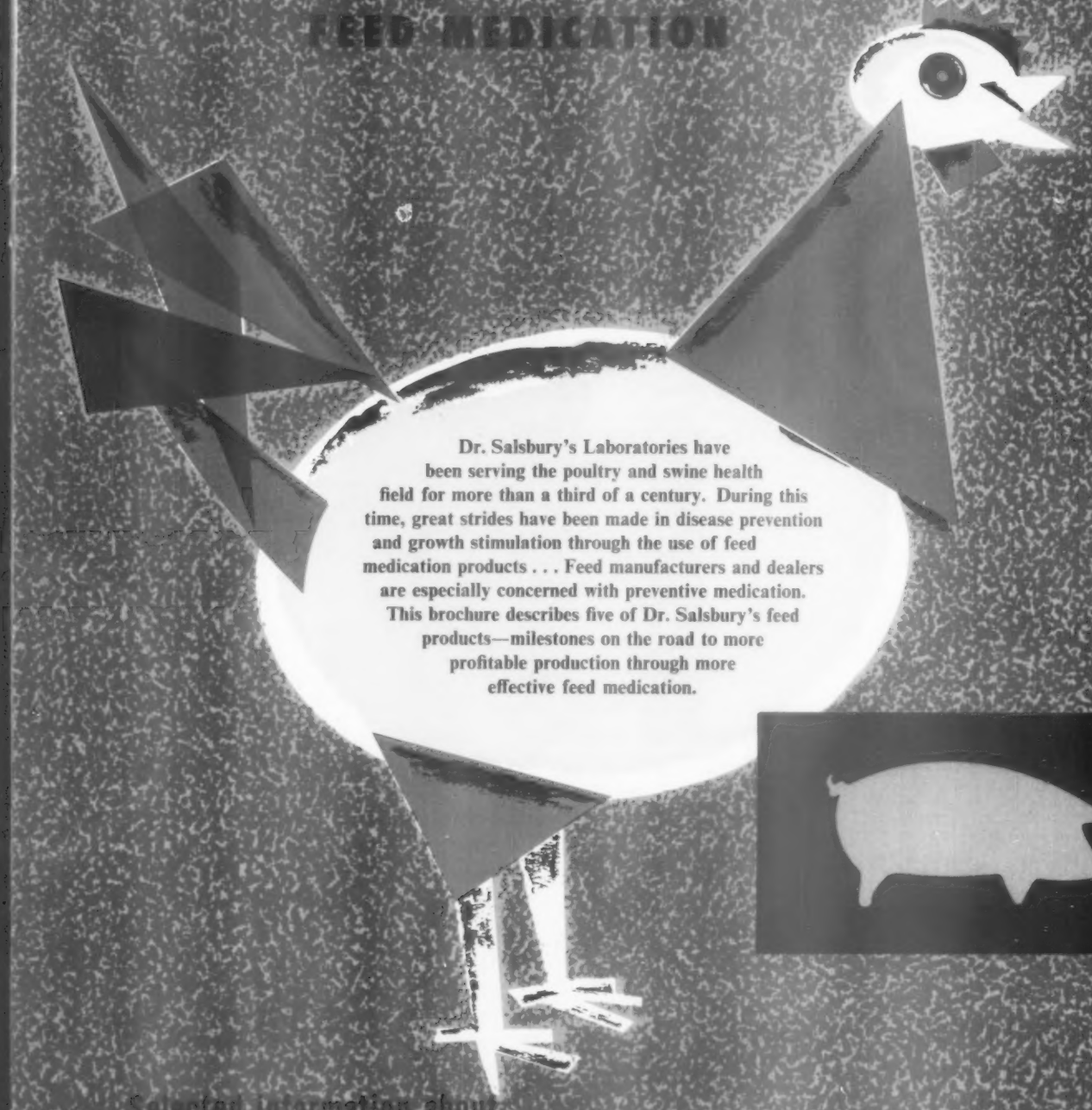
Midwest DRIED MILK COMPANY
DUNDEE ILLINOIS PHONE HAzel 6-3411

"From the Cow to Your Feed Bag, and Kept Sweet All the Way"

DISTRIBUTED BY THE FOX COMPANY
FOXCO
QUALADEE
A and D VITAMIN OIL
NEWFIELD NEW JERSEY
"PRODUCTS OF PROGRESS"

# 5 Milestones

## ON THE ROAD TO MORE EFFECTIVE FEED MEDICATION



**Dr. Salsbury's Laboratories have been serving the poultry and swine health field for more than a third of a century. During this time, great strides have been made in disease prevention and growth stimulation through the use of feed medication products . . . Feed manufacturers and dealers are especially concerned with preventive medication. This brochure describes five of Dr. Salsbury's feed products—milestones on the road to more profitable production through more effective feed medication.**

Selected information about disease preventing

**FEED PRODUCTS**

Dr.

SALSBURY'S LABORATORIES

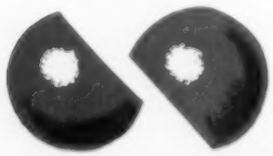
Dr. SALSBURY'S

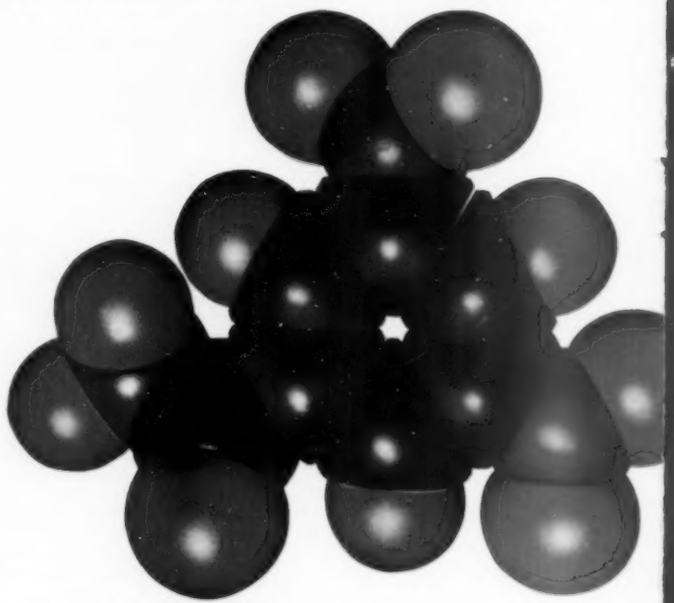
# Unistat®

## . . . FOR CHICKS, BROILERS AND GROWING CHICKENS

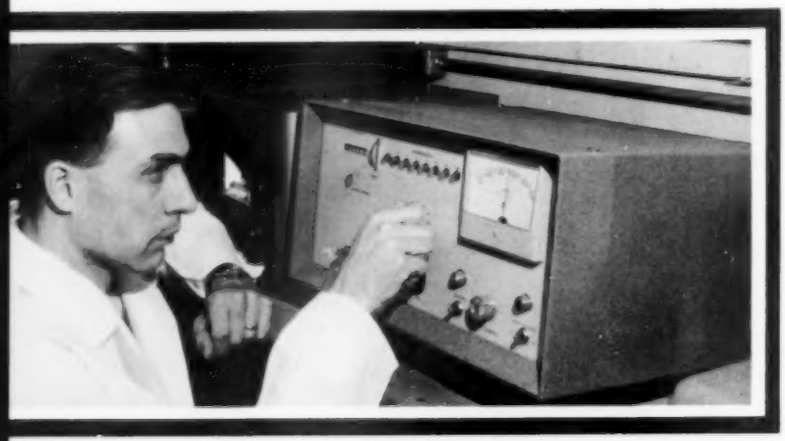
Unistat, the newest member of the growing family of Dr. Salsbury feed additives, was developed in responsive to demands for a more effective—and safe—coccidiostat. Many months of study and research, including both laboratory tests and field trials, have proven Unistat's superiority when fed regularly to chicks, broilers and growing chickens. This new and different coccidiostat is entirely safe when used as directed. Unistat birds have consistently gained faster—on less feed per pound of gain and with less mortality and morbidity.

Physically, Unistat is a yellowish, free-flowing powder that blends easily where commercial mixing equipment is used. Chemically, physically and biologically, Unistat is compatible with minerals, vitamins, antibiotics and other normal feed ingredients. It is palatable to birds. And best of all, Unistat's low cost and small dosage (2 lbs. per ton) combine to make it one of the least expensive coccidiostats.





*Unistat's formula includes the following active ingredients:* 3,5-Dinitrobenzamide, Acetyl-(para-nitrophenyl)-sulfanilamide, and 3-Nitro-4-hydroxyphenylarsonic acid. Shown above is the molecular structure or arrangement of 3,5-Dinitrobenzamide, the unique new chemical that gives Unistat its superior coccidiostatic qualities.



## LABORATORY TESTED

Unistat was tested under the most rigorous laboratory conditions to determine its efficacy as a coccidiostat and its other effects on birds. The photo at left shows edible tissue samples of Unistat-fed birds being tested by radio-active tracer testing techniques to determine the rate and extent to which this new drug was eliminated, proving still further Unistat's complete safety.

# A UNIQUE NEW COCCIDIOSTAT AND GROWTH STIMULANT... PROVEN EFFECTIVE ON MILLIONS OF BIRDS

Unistat contains a combination of active ingredients because no compound, complex or other single chemical entity has been found to be equally effective against all important species of coccidia in chickens. The multi-drug character of Unistat makes it of maximum value to the poultry raiser.

- PREVENTS COCCIDIOSIS
- STIMULATES GROWTH
- PERMITS IMMUNITY
- IMPROVES FEED EFFICIENCY
- IMPROVES PIGMENTATION

## FIELD PROVED

Widespread field trials involving hundreds of thousands of growing birds have proved that Unistat provides a unique "balanced protection" against the economically important forms of coccidiosis. Unistat is being fed to many millions of birds annually, the number growing steadily as more and more poultrymen discover its many benefits.

## Get the full story on Unistat

Because of your desire to provide superior feeds for your customers, you may wish more information about this new approach to coccidiosis control . . . about this new milestone along the road to profitable poultry production through more effective feed additives. Write, wire or phone today for your copy of Dr. Salsbury's Feed Manufacturer's Guide on Unistat. Or, ask for a Dr. Salsbury technical service adviser to call and personally answer your questions about using Unistat in chicken starter, grower and broiler feeds.

Dr. SALSBURY'S

# 2 Pol

## A BROAD-RANGE HEALTH PROTECTANT

- **STIMULATES GROWTH**
- **INCREASES FEED EFFICIENCY**
- **PROTECTS AGAINST COCCIDIOSIS (ALL TYPES), LARGE ROUNDWORMS, TAPEWORMS, TURKEY BLUECOMB AND HEXAMITIASIS**

## What is Polystat?

Polystat is a multi-purpose feed additive specially developed to provide today's poultry flocks with the above much-needed benefits. Polystat contains 3-nitro-4-hydroxyphenylarsonic acid and dibutyltin dilaurate, plus two other coccidiostatic compounds. Not only is it effective against a number of poultry diseases but it also reduces morbidity losses that accompany these diseases.

Experienced poultrymen, men whose livelihood depends on their being able to produce the most profitable flocks, start their birds on Polystat. Chicks and poults start faster, stay ahead. They grow into sturdier, healthier birds—the kind that return highest profits. Polystat cuts production costs, builds better birds, increases profitable returns. **Thousands of successful growers have established the fact that there is no other product available with the wide range of benefits supplied by Polystat.**

## HERE'S WHERE POLYSTAT WAS TESTED

*Shown here is an aerial photo of Dr. Salsbury's Research Farm where nearly 15,000 chickens and turkeys are housed. Research facilities and staff have grown steadily over the years. At present 60 employees, in Charles City alone, are engaged in research and the development of new products . . . further milestones in the never-ending search for better poultry and swine health.*

# ystat®

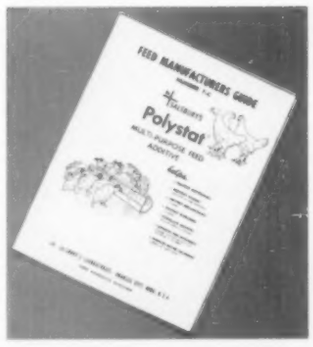
## FOR CHICKENS AND TURKEYS

### has other values

Chickens and turkeys that get Polystat continuously in their feed grow faster, do better. This is important, but it is not the whole story. Polystat has other values. For example, Polystat reduces the amount of subclinical (inapparent) disease in a flock and minimizes the effects of stress on poultry. There is less mortality, less sickness and better all-around health and appearance, when feeds contain Polystat. In addition, Polystat eliminates the need for a separate coccidiostat, a separate wormer, and a separate growth stimulant in the feed. Besides saving the direct cost of these separate feed ingredients, poultrymen save the cost of supplemental medication and morbidity losses that result from "breaks" or outbreaks that can occur when disease protection is not continuous and effective. There are many reasons for including Polystat in your chicken and turkey feeds. However, they all add up to the fact that today's poultrymen demand feeds that prevent a wide range of diseases and conditions. Polystat is such a product . . . a multi-purpose poultry health protectant.

### WRITE, WIRE OR PHONE FOR COMPLETE INFORMATION

It is impossible to tell the full Polystat story here. The 50-page Feed Manufacturer's Guide No. 7C (shown at right) contains the complete facts that you may need to consider the use of Polystat. Write, wire or phone today for your copy. Or, ask for a Dr. Salsbury technical service adviser to call and personally answer your questions about using Polystat in your chicken and turkey feeds.



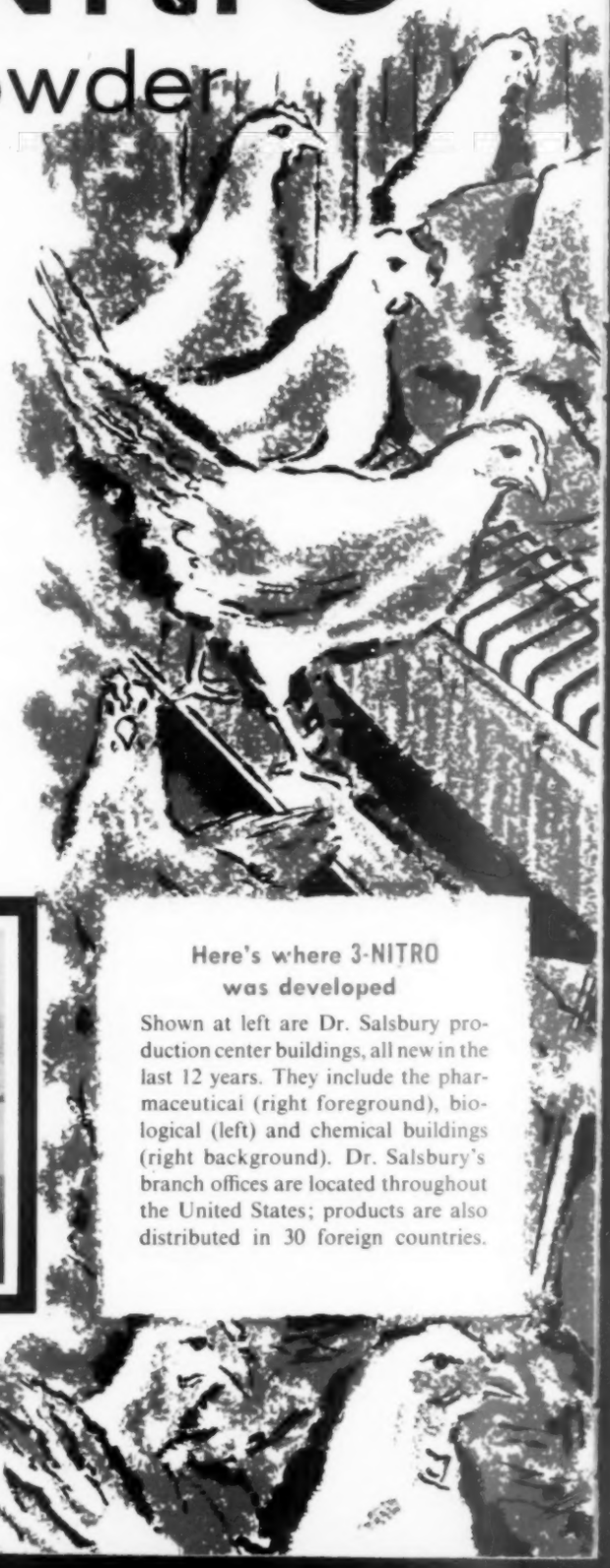
Dr. SALSBURY'S

# 3-Nitro®

## Powder

- PROMOTES FASTER GROWTH AND BETTER PIGMENTATION
- IMPROVES FEED EFFICIENCY
- INCREASES EGG PRODUCTION
- REDUCES FLOCK DEPLETION

3-Nitro is the arsenical of choice among the nation's poultrymen. **Over half of the commercial broilers raised each year get 3-Nitro in their feed** because experience and tests have shown its use to be highly profitable. For example, in trials conducted by Combs and Laurent, involving 8,000 broilers at the Maryland substation, results indicated an average extra profit of $21.50 per 1,000 birds from the use of 3-Nitro. Other tests have shown laying flocks average 12 extra eggs per hen per year at a medication cost of only 3¢ per hen a year. Broilers have more "bloom" . . . layers have better health and appearance. 3-Nitro is safe, palatable, stable, and compatible (with normal feed ingredients). Normal dosage for all poultry is 1 lb. of 3-Nitro per ton of total feed consumed.



### Here's where 3-NITRO was developed

Shown at left are Dr. Salsbury production center buildings, all new in the last 12 years. They include the pharmaceutical (right foreground), biological (left) and chemical buildings (right background). Dr. Salsbury's branch offices are located throughout the United States; products are also distributed in 30 foreign countries.

# THE ARSENICAL OF CHOICE **for Chickens, Turkeys and Hogs**

- **REDUCES BACKFAT**
- **STIMULATES GROWTH**
- **IMPROVES FEED EFFICIENCY**
- **REDUCES NUMBER OF RUNTS**
- **GIVES MORE UNIFORM FINISH**
- **REDUCES DISEASE TROUBLES**

Swine raisers quickly recognized 3-Nitro as a valuable feed additive. Tests at Iowa State have shown that growing pigs average 16% heavier—*on 5% less feed*, with 3-Nitro in their ration. Fewer runts and better finish mean higher market price. These are real profit advantages, reason enough for 3-Nitro's popularity. Recently, however, another important benefit was discovered: Further research at Iowa State College indicated 3-Nitro significantly reduces backfat and improves carcass leanness, thus enabling farmers to greatly speed up the production of meat-type hogs. With the entire swine industry working toward the leaner pork demanded by consumers, this benefit alone is attracting even more farmers to 3-Nitro. For best results, use 3-Nitro Powder at the rate of ½ to ¾ lb. per ton of feed, from weaning to market.

**WRITE, WIRE OR PHONE**
**FOR FEED MANUFACTURER'S GUIDE NO. 13-A**

*It tells the full story on 3-Nitro Powder and answers many questions about its use in swine and poultry feeds. Or, ask for a Dr. Salsbury technical service adviser to call and personally answer your questions about the use of 3-Nitro Powder.*

Dr. SALSBURY'S

# 4 Histostat®

CONTAINS 25% 4-NITROPHENYLARSONIC ACID

● **HIGHLY EFFECTIVE.** In scientific tests and in millions of turkeys every year, Histostat has consistently provided a high degree of protection against blackhead.

● **PALATABLE.** Birds don't "back away" from Histostat.

● **ECONOMICAL.** Even on a continuous program, Histostat costs but a few cents a bird—2 turkeys saved will pay for medication for 100. ● **COMPATIBLE.** Can be used with other types of medications commonly used (except arsenicals)—with full effectiveness and without complications.

● **STABLE.** Histostat is a chemically stable powder—will not lose its effectiveness during handling or in storage. Unaffected by pelleting or other feed ingredients.

## Every turkey needs protection against blackhead

Blackhead is still the No. 1 turkey disease, so far as dollar loss is concerned. Since there is no reliable cure for the disease and visible symptoms do not occur until a bird has been infected ten days or more, prevention is most important. Normally, Histostat medication starts at about 8 weeks of age, when the turkeys go out on range. If blackhead outbreaks occur earlier, Histostat is given from the start. And because there is no lasting immunity or build-up of resistance, treatment should be continued until a few days before marketing. Although experience has shown that every turkey needs protection against blackhead, such protection need not be expensive. Histostat costs so little (2 lbs. per ton) your growers cannot afford to be without the protection it affords.

# The Most Effective and Economical Blackhead Preventive . . . SAFE and palatable for long-term medication

## Champion Turkeys are Raised on Histostat

Winning 59 awards at the National Dressed Turkey Show is a remarkable achievement for birds fed Histostat. Of greater importance, though, is the extra profit which Histostat helps turkey raisers make. This makes champion birds where it counts—in the profit department. Histostat not only prevents blackhead for pennies a bird but it helps improve finish and carcass quality. That's why more and more growers are asking for Histostat in their turkey feeds.

### BLACKHEAD PREVENTION IS ONLY WAY TO AVOID LOSS

Like so many other diseases, there is no reliable cure or treatment for blackhead. Truly, "an ounce of prevention is worth a pound of cure." The growing popularity of Histostat among poultrymen indicates their complete agreement with this old saying.

Performance-proved! . . . Histostat provides unparalleled protection against Blackhead.

**FEED MANUFACTURER'S GUIDE No. 12**

*tells the full story of Histostat and how it can be used to formulate superior feeds for turkeys and chickens. Write, wire or phone for your copy today. Or, ask for a Dr. Salsbury technical service adviser to call and personally answer your questions about using Histostat.*

Dr. SALSBURY'S

# 5 Wormal

MULTISPECIFIC POULTRY WORMER

## Here's Why Growers Prefer Multispecific Wormers

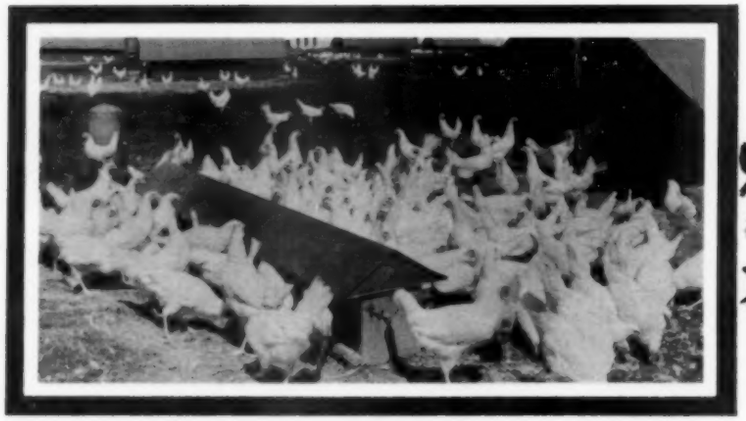
There are three different kinds of worms that cause most of the trouble in poultry—large roundworms, cecal worms and tapeworms. Experience has shown that worm damage can be reduced by sanitation and good management, but under typical field conditions it is impractical—if not impossible—to raise poultry without a considerable loss due to sickly birds, higher feed costs, reduced gains and lower production. Therefore, some worming treatment is necessary.

Unfortunately, no single drug is equally effective against all 3 kinds of worms. And even if there was such a medicant, few growers are skilled at posting and diagnosis, so that the kind of worms infecting birds might not be properly identified. Thus a grower might use the wrong worming compound—one that would work against a different kind of worm other than those in his birds. All this spells out the need for a broad-range wormer, one that gets all 3 kinds of worms. That's why growers prefer a multispecific wormer. And that's why Dr. Salsbury's Laboratories produced Wormal, the only wormer that gets all 3!

## Other Advantages of Wormal Granules

1. Wormal is the only feed additive wormer that removes large roundworms, cecal worms and 6 species of poultry tapeworms.
2. Easy to handle. Wormal Granules are crumblized for easy mixing or may be added to feeds prior to pelleting.
3. Easy to feed. Wormal fits most feeding programs —all mash, or controlled mash and grain.
4. Wormal is safe.
5. Palatable. Feed mixtures containing Wormal are readily eaten by chickens and turkeys.
6. One standard dose for birds of all ages. One pound of Wormal treats 250 birds of any age. Mix at rate of 20 lbs. per ton of mash.

## WORMAL . . . THE MOST EFFECTIVE WORMER for Chickens, Broilers, and Turkeys



**Commercial flocks** *are usually raised on clean range, thus reducing the degree of infection. However, for best results sanitation should be supplemented by a regular worming program—Wormal at 8, 12, 16 and 20 weeks for maximum worm control.*

# Removes all major types of poultry worms having economic importance

### Only Wormal contains Piperazine, Dibutyltin Dilaurate and Phenothiazine

These three drugs combine to make the safest, most effective poultry anthelmintic known today. For example, controlled tests show that piperazine removes 95% to 100% of large roundworms from chickens and turkeys. It works fast, is palatable, and does not interfere with normal feed consumption.

Dibutyltin dilaurate, a development of Dr. Salsbury's Laboratories, is available only in Wormal. It is the only flock tapewormer that removes 90% or more of the 6 commonest species of chicken tapeworms—heads and all. Phenothiazine, the third drug in Wormal, is one of the most widely used worming compounds known to veterinary science. It is also one of the most effective—removing 95% to 100% of cecal worms from poultry.

### UTILITY FLOCKS

usually show a much higher worm infection than commercial birds because not enough attention is paid to clean range and other good management practices. Thus a good worming program is needed. After pullets are housed, use Wormal every 30 days if necessary. Litter management can greatly reduce the number of worms. No matter what kind of material is used, litter should be managed so that it stays deep, loose and dry.

**write, wire or phone**

*for the full story on Wormal. Complete information will be sent to you. Or, if you wish, a Dr. Salsbury technical service adviser will arrange to call and personally answer your questions about the use of Wormal Granules in your feeds.*

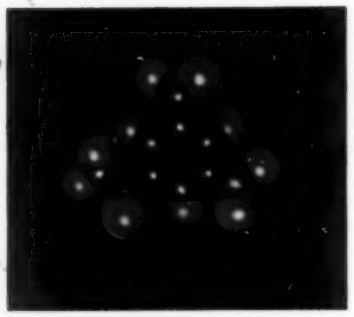
# Growing . . .

## WITH THE FEED INDUSTRY

The feed industry has grown tremendously in recent years. And that *growth will continue*, as an ever-increasing poultry and animal population clamors to be fed. Dr. Salsbury's Laboratories also has grown considerably. And we like to think that as we continue to grow with the feed industry, additional new milestones will be reached.

As we've worked hand-in-hand with the feed industry in the past, so, too, are our futures tied together. Future growth, like that of the past, will depend mutually on our being able to meet the needs of a changing agricultural economy in which fewer and fewer farmers will produce more and more food. As farmers and the feed industry adjust to these changing times, Dr. Salsbury's Laboratories will be ever ready to serve.

Briefly described on this page are some of the free services that are available to you through the world-wide facilities of Dr. Salsbury's Laboratories. Phone, write or wire for further information.



### THESE FREE SERVICES ARE YOURS FOR THE ASKING

**AUTHORITATIVE COUNSEL.** Available to you is the counsel of more than a score of Dr. Salsbury's scientists in the fields of poultry and animal health, chemistry, microbiology, protozoology, and helminthology, working with the most modern equipment in one of the largest commercial poultry—and animal—health laboratories in the world. These experts are at your service for any advice you may need regarding feed medication.

**PATHOLOGICAL SERVICE.** Dr. Salsbury's Laboratories offer you the professional diagnostic opinion you may need for providing the proper medicated feeds to cope with unusual flock health problems.

**TECHNICAL SERVICE ADVISERS.** A group of trained specialists, experienced in feed medication, will come and confer with you. They bring the entire technical resources of Dr. Salsbury's Laboratories to your aid.

**SERVICE TRAINING COURSE.** Dr. Salsbury's Laboratories have over 25 year's experience in training dealers, field servicemen, and poultrymen in the essentials of poultry health. Short courses in poultry, broiler, and turkey subjects—taught by leading scientists and educators—can help your staff render a better service.

**SCIENTIFIC INFORMATION SERVICE.** An extensive series of Feed Manufacturers Guides, bulletins, and reports of research covering practically every field of poultry health, will be sent to you regularly.

**FIELD SERVICE.** One-fourth of Dr. Salsbury's total staff—or about 100 men—are constantly in the field, providing service. These men have an average of 12 years' experience with the Laboratories. They know poultry, and they are always ready to assist you with feed medication.

Dr. S

**Feed Products Division**

## DR. SALSBURY'S LABORATORIES

Charles City, Iowa, U. S. A. Phone 200

**NATIONWIDE SERVICE TO THE FEED INDUSTRY**

Printed in U. S. A.

Form No. O6A14-58

R. W. Nelson

**NAMED MANAGER** — R. W. (Bud) Nelson has joined Flavor Corporation of America as west central regional manager, Phil Ruedig, sales manager, announced recently. Mr. Nelson, formerly feed supplement sales manager with McKesson & Robbins, central district, will headquarter in Des Moines. He is a graduate of Drake University, with a degree in biology and chemistry. With Mr. Nelson's appointment, Harvey Peckham, north central manager, will leave the Nebraska-Iowa area and take over Michigan, northern Illinois and northern Indiana, retaining Minnesota and Wisconsin. Southern Illinois and southern Indiana will be integrated into the southeastern region, managed by Noel McDonald in Louisville.

## Dow Reports Business Upturn in New Year

MIDLAND, MICH. — The Dow Chemical Co. has experienced a slight upturn in business since the close of its 1958 fiscal year May 31, and nationally the recovery now under way might take the U.S. economy to its previous peak by mid-1959, Dr. Leland I. Doan, Dow president, told stockholders at the 61st annual meeting. The shareholders reelected all incumbent members of the board of directors.

Dr. Doan said that the profit squeeze "is not only still with us but has worsened." He said a major factor in the squeeze was the inflexibility of prices in the face of continually rising costs during the recession period.

Other significant factors, he said, were increasingly keener competition among the producers of basic chemicals, of which Dow is one, and a "new kind of competition" from numerous companies which, he said, have branched out into chemical manufacture "often by the relatively economical procedure of buying processes."

In addition, both Dr. Doan and Dr. R. H. Boundy, vice president and director of research, emphasized that the development of new products from research was important to overall profits and future company growth.

A feature of the meeting was an exhibit of new products added to the company's major product lines—industrial chemicals, plastics, agricultural chemicals, magnesium and fibers.

## Canada Eases Ban On U.S. Turkeys

SALEM, ORE. — Canada has relaxed its ban on U.S. turkeys to permit imports by soup canning industries on an individual request basis, according to advice received by the Oregon department of agriculture from the USDA.

Gustave Burmeister, assistant administrator of the Foreign Agricultural Service, said his agency recognizes this as a forward step, but agrees that it does not provide the relief that should be granted.

This announcement followed a protest by the Oregon department of agriculture through the USDA to Canada's recent removal of its ban on imports of chicken and fowl except turkeys.

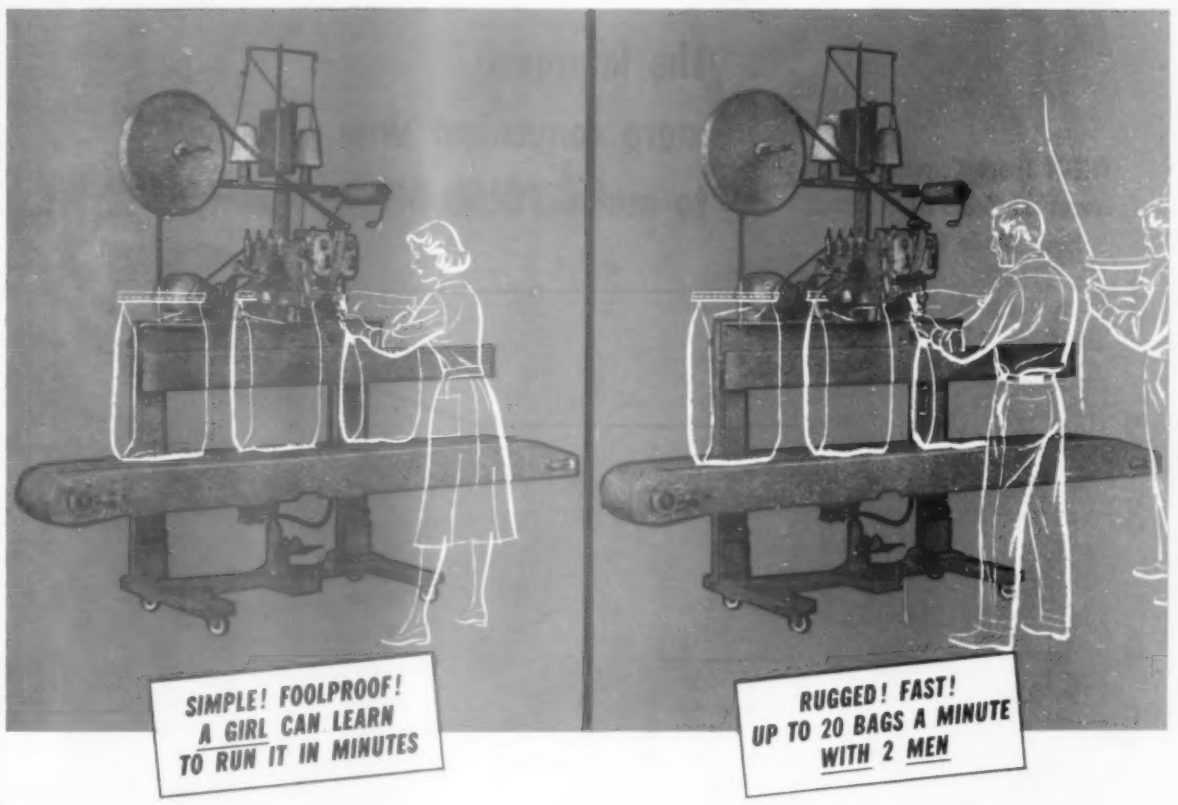

NELLIS
FEED COMPANY
*Brokers*
of Feed Ingredients
4010 Board of Trade Bldg.
WAbash 2-7322
TWX 623
Chicago 4, Ill.



JONES-HETTELSATER
CONSTRUCTION COMPANY
1911 Baltimore
BA 1-3930
Kansas City 8, Mo.
*DESIGNERS AND BUILDERS*
*of*
*Many of the Country's Outstanding*
*Feed Plants and Grain Elevators*



# Best Buy in Bagclosers!




New Bagcloser
Model 171
ONLY
$2650 F.O.B. Buffalo
COMPLETE WITH 9'9" SELF-LEVELING CONVEYOR, INSTALLATION and TRAINING FOR YOUR OPERATORS

*Change your ideas about output and costs!*
*Precision-engineering brings you new Bagcloser 171.*
*The most efficiency and versatility for your production dollar.*

**Longest Conveyor. 9'9"** Hydraulic "barber shop" height setting! Men stand erect. Plenty of elbow-room between fill spout and sewing head.

**Automatic Stitcher Head** controlled by bag passage. No inefficient one-leg hop; no tiring stoop or bend.

**Fast**—Up to 20 bags a minute with two men, 8 a minute with one, *steadily*, because it doesn't tire workers.

**Most Economical** and versatile machine for chemicals, feed, fertilizers, and consumer units in SOM paper bags. Caster-mounted, it works with all weigh machines and adjusts to spout height.

**Handles Bags 14½" to 30" High**—(Filled bags; distance from conveyor top to sewing line given).

**Explosion-Safe and Trouble-Free**—Pneumatic-clutch sewing head. Welded steel construction. Ball and roller bearings. Standard model wired to Nema 4 specs. Furnished to Nema 7 or 9 specs. at 1/3 optional cost of other machines.

INTERNATIONAL PAPER
BAGPAK DIVISION, N.Y.17, N.Y.

INTERNATIONAL PAPER COMPANY
220 East 42nd St., New York 17, N. Y.
Room 1404-AA
Please send full data on Bagcloser 171.
Name_____
Firm_____
Address_____

# Problems Confronting the Feed Dealer In the Prairie States

**Fifty feed man interviews bring to focus one prominent observation: Dealers must be prepared to expand their facilities, offer more customer service and promote new business.**

By Jess F. Blair
Feedstuffs Special Writer

Some of the new trends in the feed industry include integration in its various forms, push-button mills, bulk delivery and more specialized customer service. Others might be more employment of more well-trained personnel and placing storage units on farms or at points far removed from headquarters. In addition, the development of special poultry and livestock projects is no longer out of the ordinary.

Yet these developments will not all be found in any one area. They vary according to the type of farming done, size of farms and the agricultural prosperity of a region. A feed store owner in eastern Kansas operates differently from one in the irrigated part of northern Colorado. And the owner in a small, half-deserted town in Oklahoma has a different outlook from that of a mill owner in an expanding area like west Texas.

These opinions are based on a four-weeks' trip I recently made for Feedstuffs, which carried me almost from the Gulf Coast to South Dakota and back down the eastern side of the Rocky Mountains. During those weeks I stopped at all kinds of feed stores and mills, big ones and little ones, and talked to feed men ranging from the manager of a mill with 200 dealers down to the owner of a store doing $1,000 worth of business a month.

### Farmers Start Trends

One thing borne out by other interviews was the comment of a prosperous Nebraska dealer who said: "Contrary to popular opinion, those of us in the feed industry cannot start a new trend unless people are ready for it. The farmers themselves start in one direction, then we hurry around to the front and lead them."

This same thought was voiced by several others. In one part of Kansas where farmers are tenaciously holding onto the family-sized farm, a feed store owner said, "There is practically no bulk delivery in this community, because farmers don't want it. My customers have from 100 to 300 hens, a few milk cows and maybe six or eight brood sows. They like to bring their grain to our mill and have it ground and mixed with a supplement. Then they carry it home in their own pick-ups or trailers."

In other areas, where the small farmer is being absorbed by a larger neighbor, the feed pattern is changing rapidly. In a small Oklahoma town, the owner of a produce house said he was being forced out of business.

"At one time we had a family on every 160 acres," he said, "but in the last 15 years the farm size has increased to at least three times this. The little farmers bought feed, poultry remedies and other supplies from me, and they sold me their eggs and cream. But this big farmer is a different sort. He is smarter, more price conscious and he shops around. He may make a deal with a big mill 50 miles away to deliver his feed right to his storage bins or feeders."

### Fewer Feed Stores

This problem of the disappearing farmer is causing concern in many areas. As farmers leave, the feed stores are also reduced. In one Wyoming town, a sales manager said there were eight or nine feed stores in the


NEW SEEDBURO Steinlite MOISTURE TESTER MODEL 500 RC

The improved, more convenient way to make YOUR GRAIN Moisture Tests!

CHECK These Convenience Features 25 Years of Research Have Made Possible

1 NEW ROUND FUNNEL — handles larger (250 gram) sample ...allows a more uniform drop into test cell

2 EASY-TO-READ, BUILT-IN, EYE LEVEL THERMOMETER

3 LARGE 9 INCH METER with ONE SCALE for ALL moisture ranges...Read from level position for absolute accuracy

4 ONE BUTTON CONTROL FOR ALL MOISTURES

5 SELF-RETURNING TEST CELL SLIDE — snaps back automatically after tested sample drops into grain drawer

Now Test from a larger, more representative 250 gram sample for:

Corn, Soybeans, Wheat, Flax, Oats, Barley, Rice, Rye, Sorghums

NOTE: Tests are equivalent to the basic standards of the U.S.D.A.

You'll have to put the New Seedburo Steinlite Model 500 RC through its paces to find how easy and conveniently this improved model makes moisture tests. You simply drop the larger, more practical 250 gram sample into the test cell and read the meter...simple as that.

As added safety features the funnel resets itself automatically to hold next sample. Test cell slide snaps back automatically after tested sample is dropped into grain drawer...no danger of spilling new sample through open test cell.

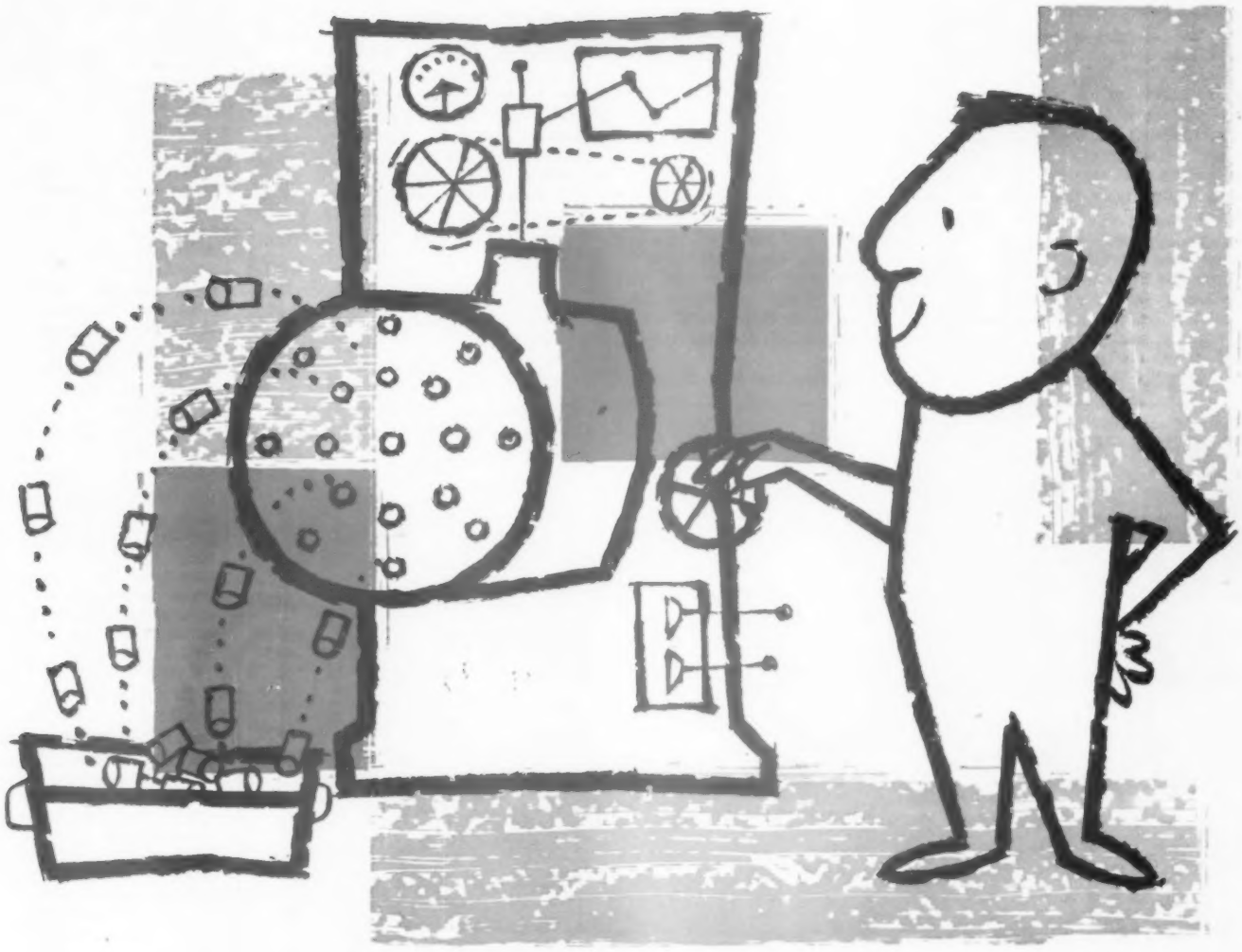
Remember, for the fastest, most accurate moisture testing operation depend on the Seedburo full line of moisture testers—and for the improved and more convenient way to run grain moistures—ask about the New Steinlite Model 500 RC. Full information and the famous Seedburo service is as near as your phone.

For Full Information
WRITE, WIRE or PHONE
ANdover 3-2128 COLLECT

SEEDBURO EQUIPMENT COMPANY
618 W. Jackson Blvd., Chicago 6, Ill. Dept. FS-9

Blatchford's ESTABLISHED IN 1900
CALF-PAB WITH DYNAFAC ESTABLISHED IN 1900
QUALITY
CUSTOMERS TRUST...AT A
PRICE TO GIVE RAPID TURNOVER
Get BOTH with Blatchford's CALF-PAB!
You know Calf-Pab is good. Generation after generation of calf raisers have trusted Blatchford's quality. Ask your distributor.

----FREE! 32 Page Calf Manual and Calf-Pab Sales Display.
----WRITE TODAY! Dept. 298
Blatchford's
Main Plant & Offices WAUKEGAN, ILL. Midwest Division Des Moines, Ia. West Coast Division Nampa, Idaho



## WHEN PELLETIZING

# Water insoluble compounds protect your analysis

**MORTON TRACE-MINERALIZED MIXING SALT** is made with trace mineral compounds that are insoluble in water. That is one of the important reasons it helps you produce better quality feeds. Research has proven that Morton trace minerals show little "leach-out" when exposed to moisture in the air, or to moisture in the pelletizing process. In addition they are compatible with natural vitamins in the feeds, and have superior nutritional availability.

This is just another example of the care Morton takes to make Morton Mixing Salts the finest obtainable, at *no extra cost to the feed mixer*. This same attention to quality from every standpoint goes into Morton Iodized Mixing Salt and Morton extra-free-flowing Special Mixing Salt. All three types are available at short notice through Morton's nation-wide distribution system.

Morton Trace-Mineralized Mixing Salt contains: **Salt, Manganoferro Phosphate, Ferrous Carbonate, Copper Oxide, Cobalt Oxide, Cuprous Iodide and Zinc Oxide.**

**Mail coupon for information on Morton Mixing Salts**

Morton Salt Company, Dept. F-927-5
110 N. Wacker Drive, Chicago 6, Illinois

Name_____

Company_____

Address_____

City_____

County_____ State_____

# MORTON MIXING SALTS

IODIZED MIXING  TRACE-MINERALIZED MIXING  SPECIAL MIXING

city and room for only half of them. Most of the plants had been built from 20 to 40 years ago; the machinery was old and almost worthless if put on the market.

"We must face the fact that many feed stores will soon be out of business," he said. "The ones that stick will become larger, more efficiently operated and the owners must increase their volume at a lower profit margin."

This was illustrated when a large egg company put in a feed mill to serve its customers, then sold feed almost at cost. Though they were under no obligation, the egg producers all stopped buying from the regular feed stores.

These examples do not mean that the feed industry is deteriorating. It does show, however, that not all present feed firms may remain in business. The farmer emerging from a changing economy is smarter and better educated than his grandfather who had a diversified farming program. The new farmer is becoming a specialist. He not only seeks a bargain in buying feed, but he also demands a lot of extras in the form of delivery, technical help and marketing advice. He also establishes his own terms of credit.

So, some smart feed dealers may be going out of business, or else they must change with the times. As the Nebraska dealer said, the feed mill owners don't start trends, but once they are started, everyone must conform.

**How to Survive**

What then can the feed store owner do to survive? In some areas a few will close their doors for the simple reason that there are too many. Yet which ones will survive? This is where new ideas, management and far-sightedness play a major role. No two dealers operate exactly alike, but here are a few examples of how some men succeeded despite handicaps.

A Kansas dealer saw that farmers would be forced off their small farms unless they could find some way to increase their income. He did some investigating, then promoted a poultry project. Now he has two or three dozen customers who keep from 500 to 2,000 hens and sell their eggs through his store. He makes a small fee on each case, but he sells the operators all their feed, baby chicks and poultry supplies.

He also worked out a hog program and helped farm families increase their livestock. He added other lines until he now has a complete one-stop farm store. And all this happened in a small village where half the business buildings are vacant. His former competitors went out of business because they apparently could not think of any way to help their farmer customers.

**Expansion**

In one of the western states, a feed mill owner went to the other extreme. Competition was keen, so he decided to overwhelm his competitors. He built an extremely large and modern mill, put on bulk delivery trucks and started setting up dealers throughout the state. He reached out a long distance to hire a top-notch sales manager and he found a mill superintendent of equal caliber.

His success story is not finished yet, but he seems to be on his way. He recently made the statement that such an expansion program would be foolish in some places, but he felt his area was ready for it.

Another mill owner kept noticing that his delivery trucks were often only half filled. Why not put something else in them besides feed, he reasoned. With this in mind, he sounded out a few stores on the feasibility of delivering their flour and sugar. Since all his shipments came in by rail, he ordered the flour and sugar at the same time and stored them in his storage buildings.

"These items bring in a nice profit," he said, "so we are gradually adding other items."

A dealer in a small Oklahoma town struggled along for awhile after buying a feed store, then decided to do his own hauling. Starting out with one old truck, he now has two large new ones and makes consignments far outside his original trade territory. He delivers feed to one town, then hauls back watermelons or other crops to be sold to dealers or at his own store. His business has also been on a steady upgrade.

**Allied Lines**

In a western city where sales were seasonal, a feed store owner began wondering how to overcome the slack periods, and talked to several people in allied industries. The Soil Conservation Service leader mentioned that there would be a lot of grass seed planted and it would need cleaning. Why didn't he investigate this angle? The feed dealer added some extra equipment and then set out to acquire all the grass seed in his part of the state. As a result, he kept his machinery and employees busy for weeks and came out with a nice profit, and even better prospects for the future.

Another dealer, in making a trip back east, took a liking for a new breed of swine. He brought back a few, found farmers would buy them, and started a profitable swine business. He began raising and also feeding them out on his own farm and brought in profit from two sources.

In addition to these examples, there were others where dealers increased business in various ways. Some added garden and pet supplies, and put in nurseries to attract town trade, and a few found specialties not yet developed by rival dealers. An Oklahoma dealer bought a mobile grinder and mixer and started a country route. His business increased so steadily that he bought a second unit and started operating it from another store he owned.

Finding such owners came as a result of stopping at many feed stores and mills. For each prosperous store visited, there would be two others doing only a fair amount of business, and another pair going backwards in sales and profits.

From these half a hundred interviews, one fact stood out prominently: Dealers must be prepared to expand their facilities, offer more customer service and promote new business. Even then the luck of having a proper location will play a part. But the main stress must be on efficient management. The dealer who continues to do business exactly as he did 10 years ago is likely to be out of business altogether before another decade passes.

**BEGINS OPERATIONS**

CHOWCHILIA, CAL. — Western Grain & Milling began operations here recently. Dealing in bulk and packaged feed, the firm is owned by Donald G. Pitman.

**MAKES MONEY!**
Sell your customers a feed that produces more eggs and you will sell more feeds. It's easy . . . just add Marcol B-75, the modern liquid fat additive, to your present ration. Field tests prove that Marcol B-75 helps get more early eggs, gets pullets into peak production faster, and holds production during stress periods.

**SAVES MONEY!**
Your present equipment can mix up to three batches of feed with Marcol B-75 to one with tallow. Marcol B-75 actually saves you money by cutting production time up to two-thirds!

**Check these other important advantages:**

- WILL NOT DETERIORATE OR BECOME RANCID
- SETTLES DUST
- IMPROVES COLOR AND APPEARANCE OF FEED
- NO SETTING-UP PROBLEMS
- MORE DIGESTIBLE THAN ANIMAL FATS
- MIXES UP TO THREE TIMES FASTER THAN TALLOW

Make more profit for your mill and your egg producers by adding Marcol B-75 to your present laying feeds.

**MARCO CHEMICAL COMPANY**
P. O. BOX 8 FORT WORTH 1, TEXAS

# Leaders of Cooperatives Advised on Adjusting to Integration Developments

STATE COLLEGE, PA.—The word "Integration" probably was heard as much or more than any other at the recent conference of the American Institute of Cooperation at Pennsylvania State University.

Discussions of integration and contract farming, and what cooperatives might do in relation to these developments, occupied much of the attention of more than 3,000 persons attending the conference.

Feed men in both private business and cooperatives will be interested in what speakers from cooperatives, the U.S. Department of Agriculture, colleges and other agencies had to say.

"For a growing number of commodities, the needs of the market require close coordination between consumer demands and farm production," said Ezra Taft Benson, secretary of agriculture. "Either non-farm organizations will furnish this coordination—by means of vertical integration — or farmers themselves, through their cooperatives, will do much of the integrating. What will cooperatives do about it?

"It is no longer a question of whether or not economic integration is to come to agriculture. It is here. It is bound to grow. Some farmers are already caught in the current. They are swept along by forces within our economy which are tying the functions of production, marketing, processing and consumption closer and closer together in an effort to reduce costs, improve products and give better service. Scientific and technical advances are uniting on-farm functions with off-farm functions.

"Nor is it a question of whether integration is good or bad for agriculture. It can be either . . . Whether it benefits individual farmers may depend very largely on how the integrating is done and who does it.

"Farm people must take the initiative. Farmers must mold integration themselves to make sure it adequately serves farm interests.

### Advice to Cooperatives

"The ability of cooperatives to adjust policies, methods, operations and services to meet changing needs and conditions may determine whether the business of farming will remain free, profitable and under the control of farmers themselves."

Mr. Benson told the cooperative leaders: "Broaden your services to take care of major needs of producers—provide needed processing and marketing facilities, the production supplies and services, the credit and technical assistance farmers need to maintain in their own hands control of farming. Build your cooperatives bigger—in membership, resources, research, services. Be satisfied with nothing less than top-notch leadership. Bring about more cooperation between cooperatives. Build better public relations for the cooperative movement."

R. B. Tootell, governor of the Farm Credit Administration, Washington, said: "Some of the largest and most efficient present-day farmer cooperatives will have to become larger through federation, consolidation or merger if they are to compete in an economy dominated by large integrated businesses.

"If farmers are to capture for themselves a reasonable part of the benefits from the efficiencies of integrated operations and earn incomes comparable with those of other segments of our economy, they will need organizations that can process, merchandise and nationally advertise their products.

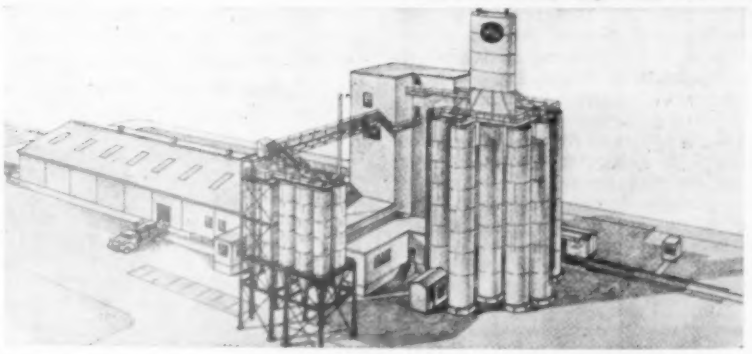
"No one can predict just how far integrated businesses controlled by farmers through their cooperatives can and should go. It will probably vary somewhat by commodities . . .

"Farmers individually and through their cooperatives will need ever increasing amounts of capital. They will have to be willing to invest larger amounts of risk capital from their own pockets. They will also need large amounts of borrowed money—credit . . .

"The farmer will have to be prepared to deliver the type and quality of product the market wants and at an agreed time. An increasing number of items will have to be produced to 'specifications,' and probably under some form of contract agreement. Farmers must decide whether they will be contracting with independent concerns or whether they will primarily join with other farmers in cooperatives to handle this part of their business for them as part of an integrated operation."

### "Not Necessarily Bad"

Vertical integration isn't necessarily a bad thing, and it can often be used to the farmer's advantage, a University of Wisconsin farm econ-



**NEW FEED PLANT—Shown is an artist's drawing of the new $650,000 feed manufacturing plant being constructed in Cherokee, Iowa, by the Walnut Grove Products Co., Inc., with general offices in Atlantic, Iowa. Construction began Sept. 1, with completion date scheduled for Feb. 1, 1959. The new plant will be capable of turning out 40,000 tons of feed supplements annually, and will employ about 30 people. The firm has other plants at Elkhorn, Neb., and at Atlantic, West Liberty and Independence, Iowa.**


FEED SAVE WAY FEEDS

SAVE WAY FEED MILLS

CHICKASHA, OKLAHOMA

Branch Locations:

BROKEN ARROW, OKLAHOMA • HICO, TEXAS

PILOT POINT, TEXAS • FORT WORTH, TEXAS



THE Marion MIXING and BLENDING ACTION

AN EXCLUSIVE DESIGN!

Two exclusively designed Marion mixing arm and paddle blades scoop, lift and tumble each batch with a continuous, thorough mixing action—keeping every minute portion of the batch moving from the ends to center. A mixing cycle that never ends—to guarantee formula uniformity.

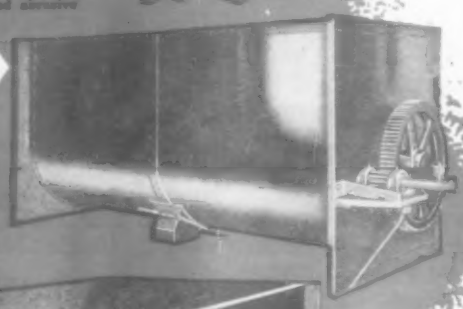
Engineered by Speed-Rite — the Manufacturers of Quality Horizontal Mixing Equipment

INDUSTRIAL MIXER

The Marion Industrial Mixer is engineered to precision mix the toughest mixes, and recommended for heavy and abrasive materials.

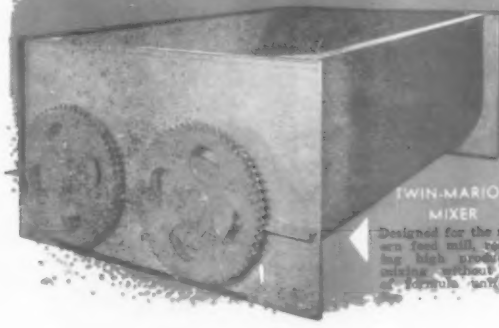
STANDARD MIXER

A rugged, dependable mixer that will provide absolute mix uniformity for years to come.



TWIN-MARION MIXER

Designed for the modern feed mill, handling high productions mixing without loss of formula uniformity.



the Best Answer to any mixing problem!

MIXING:
- DRY FEEDS

BLENDING:
- MOLASSES • ANIMAL FATS
- FISH SOLUBLES
- OTHER LIQUID ADDITIVES

You need only one mixer in your plant or mill to satisfy all your mixing and blending requirements, the MARION MIXER. The Marion Mixer handles the mixing of dry feeds, and blending of molasses, fish solubles, animal fats and other liquid additives with the same ease and dependability.

The MARION MIXER has proved to be one of the Most Accurate and Versatile mixers in the industry. The exclusive Marion mixing and blending action is the key to its accuracy because of its continous cross-blending and other mixing action which insures that even the smallest amounts of materials can be thoroughly and completely blended into your product. A constant uniform mix is guaranteed batch after batch, bag after bag.

Send TODAY!

RAPIDS MACHINERY CO.

827 11th Street, Marion, Iowa

I am interested in the MARION MIXERS checked below:

☐ MOLASSES MIXER: CAPACITY ☐ 1000# ☐ 2000# ☐ 3000# ☐ 4000#

☐ DRY MIXER CAPACITY ☐ 300# ☐ 500# ☐ 1000# ☐ 2000# ☐ 3000# ☐ 4000# ☐ 6000#

NAME _____

ADDRESS _____

CITY _____ STATE _____

omist told the conference. Willard Mueller said that it can be either good or bad for farmers, depending on the relative bargaining power of farmers with buyers or suppliers.

"As long as buyers of farm products and sellers of farm supplies compete quite keenly for farmers' business, the entrance of integration into the picture doesn't necessarily put farmers at any added disadvantage," Prof. Mueller said.

He called cooperatives the "farmers' answer to lack of competition."

"The absence of keen rivalry among buyers or suppliers is the real culprit in integration deals," he said. "If competition isn't effective, farmers should think in terms of ways to increase their bargaining power—possibly by becoming integrators themselves, through farm cooperatives for processing products or selling farm supplies. . . .

"Actually, integration offers are often the result of competition among farm suppliers and buyers for farmers' business. And in such cases, if real marketing economies result, farmers may hope to share in them."

**Top Producers Only**

Carroll P. Streeter, editor of Farm Journal, recommended a new kind of cooperative as having a good chance of "helping farmers to become integrators and to reap integrators' profits. This new kind of co-op will limit its membership to those operators who are willing to produce a top quality product—a co-op in which you've got to be good to belong. This type of cooperative will fight for and get a premium price for its quality product."

Glen A. Boger, Lehigh Valley Cooperative Farmers of Allentown, Pa., said the farmer "has virtually become a share-cropper when he raises a product for somebody else who controls the profits."

"In vertical integration," he said, "the farmer has security in the form of wages for tending flocks or crops. But wages are not profits. Profits are returns on capital investment and initiative. Thus the farmer must be content with wages." Mr. Boger called cooperatives a form of horizontal integration where independent farmers gather together as equals for improvement, processing and marketing of a common product.

O. E. Zacharias, Southern States Cooperative, Richmond, Va., said contract farming arose when income from many farm fields became too low to justify the taking of more risk by the capital needed. "Contracts have been substituted as a means for underwriting the risk," he said. "Farm contracts are also a means of integrating into one package the income from all segments of the farm operation.'"

**Called "Only Hope"**

"Farmers used to be integrated in their operations, but they gave up one process after another," said D. W. Brooks, Cotton Producers Assn., Atlanta. "Now they must regain what they lost, which is not easy. The only hope of the family-size farm is the cooperative prepared to give service along many lines."

E. B. Kaylor, Rockingham Cooperative Farm Bureau, Inc., Harrisonburg, Va., said: "If farmers will recognize economic change and take necessary cooperative action to keep in pace with it, they will not have to worry about integration."

Marketing cooperatives must adjust their operations to new conditions, said J. M. Tinley, University of California economist. He termed integration the most important problem facing cooperatives in the years ahead.

"Integration in California has already changed marketing methods and channels," said H. C. Jackson, California Farm Bureau Marketing Assn. He estimated feed lots supply better than 90% of the fat cattle.

The forces that have brought changes in agriculture are the same forces that are changing industry and business, according to J. W. Stiles, Cooperative G.L.F. Exchange, Ithaca, N.Y. "The individual farm unit has to be larger to succeed," he haid. "It takes a lot more capital; it has a much higher break-even point than formerly. Changes in farming bring about changes in cooperatives."

A. L. Owen, University of Arkansas, said: "In the long run, we believe producers' interests can best be served by the development of area, state or regional cooperative livestock marketing agencies which will market their feeder animals as well as slaughter livestock."

**Contract Farming Suggested**

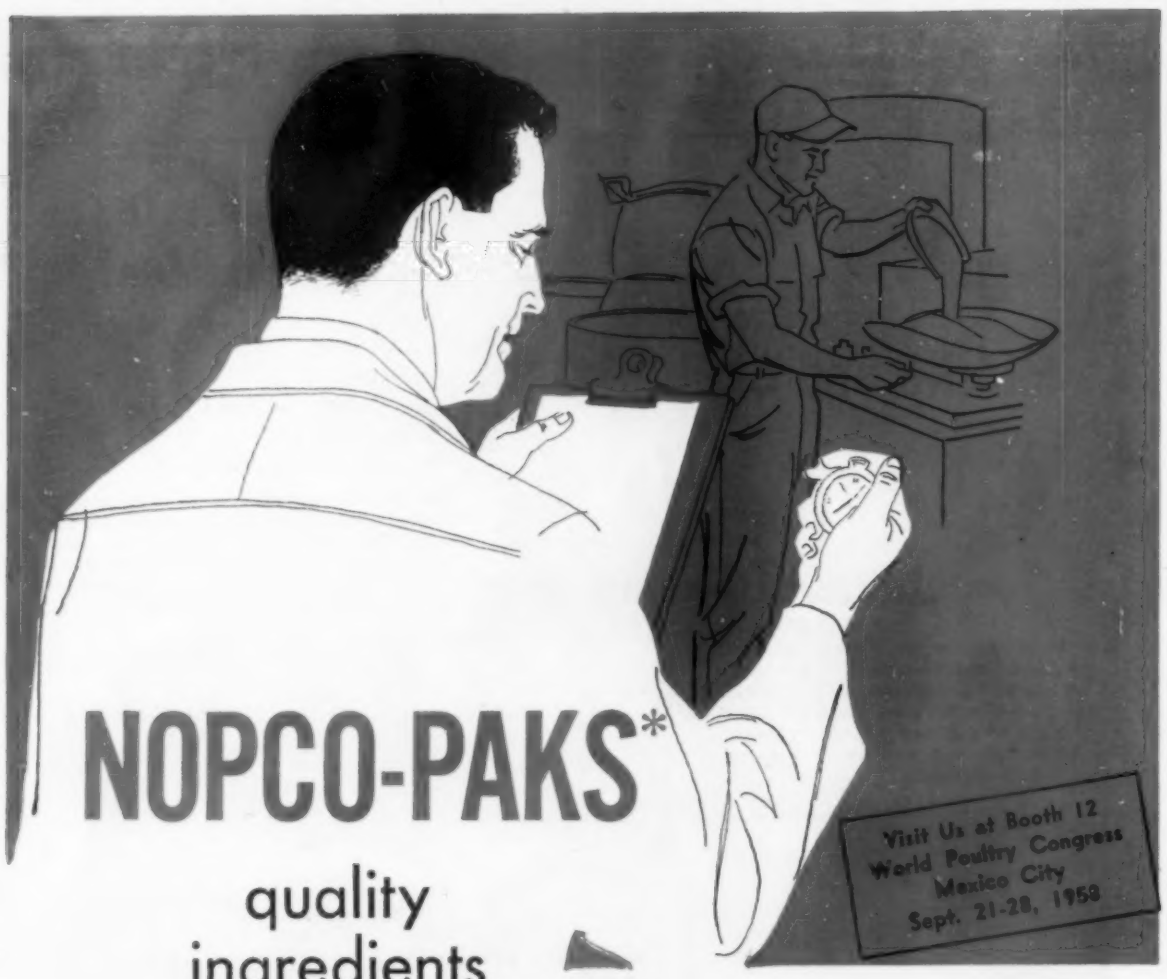
Gordon W. Sprague, Land O'Lakes Creameries, Minneapolis, said: "Our answer to 'integration in turkey marketing,' I think, perhaps refers to the very special application of integration which is better known as 'contract farming,' or that type of integration by which a marketing organization controls volume from the producer to the market by means of a series of contractual relationships."

"Vertical integration for growers is an economic problem, not a crusade," said Homer J. Preston, Farmer Cooperative Service, Washington. "Whether or not to undertake the venture should be decided by cold economic facts, not emotion."

Howard A. Cowden, Consumers Cooperative Assn., Kansas City, said: "Our early studies of the problems of swine producers convinced us that the first step in developing a sound integrated pork marketing program should be the development of top quality meat-type hogs." He said swine testing stations have been established to enable farmers to locate and develop good breeding stock.

"Cooperatives may well be the only structure through which the benefits of vertical integration and control of farming will rest with the present generation of young people when they assume responsibility for the operation of our farms," said Glenn S. Fox, Consumers Cooperative Assn.

Out of the integration scramble, one cooperative pattern seems to be shaping up, said C. G. Randell, Farmer Cooperative Service, and that is an arrangement wherein the cooperative livestock marketing associations are endeavoring to work out an operating program with cooperative farm supply agencies.


NOPCO-PAKS*

quality ingredients accurately blended

Nopco-Paks are formulated to give you feed efficiency and blended under the supervision of qualified nutritionists. The mixing operation that has been set up virtually eliminates any chance of human error. The equipment used is of a design and capacity to assure a product of uniformly high quality. Even the length of time that ingredients stay in the mixes is carefully determined so that each batch-sized bag will be an evenly blended premix. These precautions are essential to the production of Nopco-Paks that will provide full potency and assure excellent feed performance.

Blending of Nopco-Paks is done by experts. Why not use Nopco's specially designed facilities to obtain accurate, uniform premixes that deliver the potency you need. Talk to your Nopco representative about your own specially blended Nopco-Pak or write us direct.

**Nopco-Pak is a registered trademark of Nopco Chemical Company*

NOPCO CHEMICAL COMPANY

General Offices: 60 Park Place, Newark 1, N.J.

Plants: Harrison, N.J. • Peoria, Ill. • Richmond, Calif.

NOPCO®

Basic producers of Micratized® Vitamins A and D, niacin, calcium pantothenate, choline chloride, and other products

More and More . . . Feed Mills Are using More and More Stabilized ANIMAL FATS and MEAT PROTEINS

Find Out Why . . . WRITE
NATIONAL RENDERERS ASSOCIATION
Organized In 1933
30 N. LA SALLE ST.
CHICAGO 2, ILL.
Phone FR 2-3289

# THE New HUDSON HANDLE BAG

## OPENS NEW MARKETS...AWAKENS OLD ONES!

ANOTHER FIRST FROM HUDSON is the perfected—fully tested heavy duty handle for a multiwall bag containing 50 or more pounds.

The Easy Carry—Easy Pour* features of the Hudson Handle Bag make it the ideal package for both consumer and industrial products. It brings unlimited possibilities for self-service and grocery supermarket outlets of products in the 50 lb. package. Customer in-store pick-up by men and women is certain because of the effortless carrying without soiling clothing.

No question about it — the Hudson Handle Bag — takes the effort out of all phases of distribution and sells your product on sight. Dealers will prefer to carry the brand with the handle feature.

The NEW Hudson Handle Bag can fire up your sales and get you ***new distribution, dealer promotion and customer preference,*** and the difference in cost is negligible.

*Get all the facts . . . today from Hudson!*

HUDSON MULTIWALLS

**HUDSON PULP & PAPER CORP.**
477 MADISON AVENUE • NEW YORK 22, N. Y.

**The Extras in Hudson Bags Increase your Sales, Cut your Costs.**

***EASY CARRY — EASY POUR** . . . All the Hudson EXTRAS are naturals with the Handle Bag. ***Snap-Open bag*** — so easy a ten year old can open a bag with ease. ***Design Service*** — horizontal design assistance for greater impact and readability is offered free. Plus: ***Non-Slip Ink, Magnetized, Foil Wall, Ply-Weld, Seal-O-Matic Sleeve, Cold Proof AL, M. V. T. Seal, Fast Delivery, Written Guarantee.***

ON THE FARM · AT HOME · IN THE STORE · IN THE PLANT

*Everybody Will Prefer the BAG with the handle .*
Get the facts today

HUDSON PULP & PAPER CORP. Dept. 19
477 Madison Avenue, New York 22, N. Y.

Gentlemen:
Please send me all the facts on the NEW HUDSON HANDLE BAG.

Name_____
Title_____
Name of Firm_____
Address_____
City_____ Zone____ State_____

# NOW..! LOAD or UNLOAD BULK FEED

## with the PAMCO BACK SAVER

**Attach this inexpensive AUGER UNIT to a grain box and you can handle any feed in bulk!**

- Ideal for hoist trucks
- Complete hydraulic operation
- Can load as easily as unload
- Will handle bulk feed grain or pellets
- Minimum breakage of pellets

Conversion units can be mounted on your present grain box.

*For Complete Information Write:*

**PRODUCTIVE ACRES MFG. CO.**

**406 BROADWAY KEOTA, IOWA PHONE: ME 63071**

OTHER INSTALLATION POINTS: Englewood, Colo.; East Grand Forks, Minn.; Delphi, Indiana; Portland, Oregon; Jefferson, Georgia.


## Junior Poultry Show Planned in Washington

PUYALLUP, WASH.—Washington's Junior Poultry Exposition offers cash prizes totaling $5,000 along with other awards to the state's Future Farmers of America and 4-H Club boys and girls Oct. 7-8.

Two new awards have been added this year. One is the "Washington Junior Poultrymen of the Year" and the other is the selection of the state's top demonstration teams. Top winners will be named for both the 4-H Clubs and the FFA. The junior poultryman winners will be awarded an expense-paid trip to the American Poultry Industries junior fact-finding conference to be held in February at Kansas City.

"All events pay handsomely in valuable educational experiences and premiums for the youthful contenders, and can help to build the Washington poultry industry," according to John G. Wilson, exposition manager.

Des Moines - A. E. GOURLEY - CH 4-7291
Decatur - W. F. OSBORNE - 5365
Buffalo - D. A. COON - CI-5850
MINNEAPOLIS - H. B. BOWEN - FE 9-8221
Long Beach - J. S. R. MACKAY - NE 6-2337
Long Beach - R. L. GIRVEN - NE 6-2337
LET US HELP YOU
Chicago - G. E. FUHR - FR 2-3437
Bellevue - J. F. McPHERSON - 2-8201
Philadelphia - H. M. ENGEL - PE 5-8787
KELLOGG'S THE TEST TELLS 1894
SOY BEAN OIL MEAL
NEW PROCESS (SOLVENT)
PEASIZE
PELLETS
FLAKES
50% SOYBEAN MEAL
LINSEED OIL MEAL
OLD PROCESS (EXPELLER)
PELLETS
PEASIZE
SPENCER KELLOGG AND SONS, INC.
BUFFALO 5, N. Y. - BELLEVUE, OHIO
CHICAGO, ILL. - MINNEAPOLIS, MINN.
DECATUR, ILL. - DES MOINES, IOWA
EDGEWATER, N. J. - LONG BEACH, CALIF.
KELLOGG'S THE TEST TELLS 1894

That clergyman was an expert in human relations who was disturbed during a sermon by some noisy persons. He did not scold or manifest any sign of anger.

"I am always reluctant," he said quietly, "to expose those who misbehave during services, because of an experience I had some years ago. A young man who sat in front of me was laughing and making grimaces. I was annoyed and rebuked him severely. Later I was told that I had made a grave mistake. The man I had reproved was an idiot."

The noise-makers subsided.

◆ ◆ ◆

The young man had decided that Thanksgiving Day would be the most romantic time to propose to his sweetheart. When the stage was properly set, he dropped to one knee before her and said, "Darling, will you sail with me on the sea of holy matrimony?"

"Yes," replied his practical-minded girl friend, "after you've made a large raft of money."

◆ ◆ ◆

A housewife was one of several volunteers for Red Cross service duties. She remarked to the group that she did not know what hours she could work because she had an old dog at home who required a lot of her time.

Next week, at her first aid class, she said something about having tried out her lesson on bandages on her dog.

"Oh, then you really do have a dog!" one of the other women exclaimed. "I've been thinking about that all week—wondering whether you were referring to your husband."

◆ ◆ ◆

"My poor man," said the wealthy dowager to the accordion player in the restaurant, "why do you cry so hard during your playing? Do the songs bring back unhappy memories?"

"It's not the songs," sobbed the musician. "It's just the accordion—it pinches my stomach."

- Stimulates appetite—adds aroma, taste appeal
- Stabilizes fat-bearing ingredients—guards vital nutrients—helps prevent vitamin deficiency diseases
- Eliminates bitter taste of additives
- Prevents feed off-odors—powerful antioxidant and flavor action

*Write for "taste-test" sample*

SUCRO FLAVOR

*PRODUCT OF*

**FLAVOR CORPORATION OF AMERICA**

3037 N. Clark Street
Chicago 14, Illinois

*The Yellow's Back!* **XANTHOPHYLLS**—*the mysterious yellow-orange pigments found in alfalfa meal—give poultry and egg yolks that butter-yellow coloring people like!*

# *Brother—How Times Have Changed!*

**THERE WAS A TIME** when only one or two larger alfalfa dehydrators had facilities for gas storage, pelleting, oil treatment and bulk shipment of alfalfa meal. But, brother—how times have changed!

Today, each one of the KEY DEHYDRATORS listed on this page has all the modern, efficient equipment needed for production of top-quality, high-protein, full-vitamin alfalfa meal—inert gas storage, modern pelleting and grinding machinery, automatic blending and oil treating equipment. And KEY DEHYDRATORS are independent business men . . . each personally supervising each step of production . . . each personally responsible to you, the buyer, for the quality of his product . . . each helping to maintain a free and open market for feed ingredients. Next time, make sure your alfalfa meal comes from a KEY DEHYDRATOR!

## *These Are Your* KEY *Alfalfa Dehydrators:*

**Al-Fa Meal Co.**
*Columbus, Nebraska*

**Beermann Bros. Dehy**
*Dakota City, Nebraska*

**Dehy Alfalfa Mills, Inc.**
*Fremont, Nebraska*

**F. J. Higgins Milling Co.**
*Schuyler, Nebraska*

**Iowa Valley Milling Co.**
*Iowa City, Iowa*

**Prairie Dehydrating Co.**
*Roanoke, Illinois*

**Progress Products Co., Inc.**
*Overton, Nebraska*

**Trico Feed Mills**
*Minden, Nebraska*

**Wraybill Dehydrating Co.**
*Sloan, Iowa*

# CONVENTION CALENDAR

## New Listings

**For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.**

• • •

Nov. 5—Jersey Chick Assn.; Berkeley-Carteret Hotel, Asbury Park, N.J.; sec., J. C. Taylor, College of Agriculture, New Brunswick, N.J.

• • •

Sept. 29-30 — Colorado Feed Conference; Colorado State University, Ft. Collins; chm., Dr. L. E. Washburn, Animal Industry Dept.

Oct. 2 — Nebraska Feeders Day, North Platte Experiment Station, North Platte, Neb.; Animal Husbandry Department, University of Nebraska, Lincoln.

Oct. 6-7—Seventh Region National Renderers Assn.; Sheraton-Jefferson Hotel, St. Louis, Mo.; sec., R. G. Day, Tulsa Rendering Co., Collinsville, Okla.

Oct. 7-9 — Northeastern Poultry Producers Council Poultry Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; chm., Alfred Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.

Oct. 8-10 — Texas Nutrition Conference; Texas Agricultural and Mechanical College, College Station, Texas; chm., J. R. Couch, Poultry Science Dept.

Oct. 9—Vermont Feed Dealers & Manufacturers Assn.; Agricultural Science Bldg., University of Vermont, Burlington, Vt.; sec., D. C. Henderson, Poultry Department.

Oct. 9-10—Washington Poultry & Hatchery Assn.; Winthrop Hotel, Tacoma, Wash.

Oct. 10-11—Arizona Grain and Seed Assn.; Hotel Westward Ho, Phoenix, Ariz.; sec., Hayden C. Hayden, Box 156, Tempe, Ariz.

Oct. 12-14—Kentucky Poultry Improvement Assn. and Kentucky Poultry Federation; Kenlake Hotel, Hardin, Kentucky; sec., John W. Tuttle, 730 Rose Street, Lexington, Ky.

Oct. 14-15—Virginia State Poultry Federation; Natural Bridge Hotel, Natural Bridge, Va.; sec., P. Paul Williams, 615 E. Franklin St., Richmond, Va.

Oct. 14-16—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, University of Maryland, College Park, Md.

Oct. 15 — Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Irwin Olcott, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32, Ill.

Oct. 16-17—Michigan Feed & Grain Dealers Assn., Fall Conference; Kellogg Center, Michigan State University, East Lansing; sec., Nevels Pearson, P.O. Box 472, East Lansing, Mich.

Oct. 16-17 — Oklahoma Formula Feed Conference, Oklahoma State University, Stillwater, Okla.; chm., Dr. Rollin H. Thayer, Poultry Science Dept.

Oct. 20-21—California Animal Industry Conference, Fresno Memorial Auditorium, Fresno, Cal.; sponsored by University of California and California Hay, Grain & Feed Dealers Assn.; sec., John Gilmore, 1400 10th St., Sacramento, Cal.

Oct. 23-24—First Annual Poultrymen's Institute; State College of Washington, Pullman, Wash.

Oct. 23-24 — West Virginia Feed Dealers Assn.; Blackwater Falls Lodge, Davis, W. Va.; sec., J. S. Larruck, 408 Prince St., Beckley, W. Va.

Oct. 23-24 — Iowa Seed Dealers Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines, Iowa.

Oct. 23-25 — Nutrition Conference, Alabama Feed Assn.; Alabama Poly-

## CALENDAR FOR 1958-59

**SEPTEMBER**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | | | | |

**OCTOBER**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

**NOVEMBER**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | | | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | | | | | | |

**DECEMBER**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | 31 | | | |

**JANUARY**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | 1 | 2 | 3 |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 |

**FEBRUARY**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |

**MARCH**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 29 | 30 | 31 | | | | |

**APRIL**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | | |

**MAY**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | | 1 | 2 |
| 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 31 | | | | | | |

**JUNE**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | | | | |

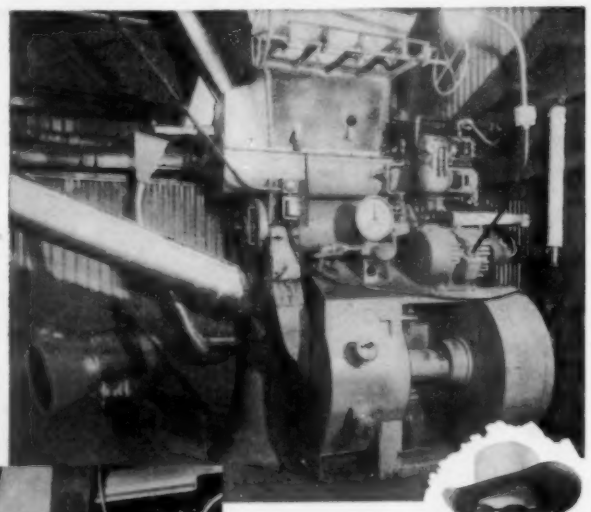
**JULY**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

**AUGUST**

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| | | | | | | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | | | | | |


# Proving the Versatility and Performance of Wenger Multi-Duty PELLET MILLS



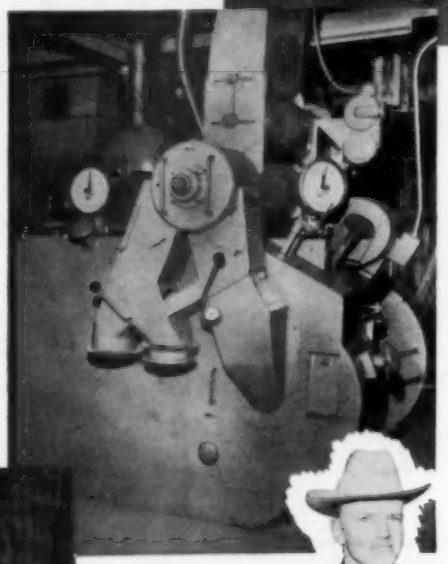
Although engineered primarily as a hard pellet mill, the Wenger Multi-Duty is exceeding expectations in every field of feed processing. For producing hard pellets (with or without liquids) Wenger blended mash feeds, and with Hi-Molasses pellet extruder available as an optional extra, the Multi-Duty represents the greatest advance in feed processing in many years.

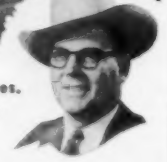
**FOR ECONOMY—**

- in total equipment cost
- in man hours per ton of production
- in operation
- in liquid proportioning
- in floor space
- in installation costs
- in minimizing contamination hazards

**No other pellet mill is the equal of the Multi-Duty.**

*Write for Catalog*





Mr. Ray Steel, Vice Pres. Indianola Operations, Honeggers', Inc. Indianola, Iowa

Honeggers' 100 HP Multi-Duty Pellet Mill which is used in producing both hard pellets and Hi-Molasses pellets in their new mill at Indianola, Iowa.

Mr. Steele says "Our new Wenger Multi-Duty does even better than we had hoped for. I'm sure this machine is the answer to the need in the feed industry for a smaller, but still a more efficient feed manufacturing plant."

Mr. Larry Jenkins, President Texas Feed & Cattle Co., Kilgore, Texas

Wenger's 100 HP Multi-Duty Pellet Mill with built in liquid conditioning feeder for fats and molasses is the heart of their fine new mill.

Mr. Jenkins says: "We are obtaining optimum quality control in blending liquids in our Wenger Multi-Duty Pellet Mill with excellent tonnage and a minimum of fines."

Mr. Wendell S. Haley, Manager Ashland Cooperative Exchange Ashland, Kansas

Ashland is using a new Wenger 50 HP Multi-Duty Pellet Mill to make Hard Pellets and Hi-Molasses Pellets as well as molasses meal feeds.

Mr. Haley states that, "In my opinion the Multi-Duty is tops in performance and the Wenger Company is tops in service and 'follow thru'."

**Wenger Mixer Manufacturing** SABETHA, KANSAS · PHONE 111

Standard of the Industry for Liquid Feed Mixing, Pelleting and Cooling Equipment.

**Farm-to-Market Co-ordination**

MEL MILLER & CO., INC.
20 WEST NINTH ST. BUILDING
KANSAS CITY, MO.

**In Canada it's . . .**

**N. D. HOGG, LTD.**
Feed Ingredient Merchants
P. O. Box 66, Station Q
TORONTO, ONT., CANADA

**Fleischmann's F·I·D·Y**
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

# NEW! POTENT! PROFITABLE!

## for sweeter sales and sweeter feeds...

**Natico**
**DRY**
Feeding Cane
**MOLASSES**
Product

**MORE THAN**
**48%**
**SUGAR!**

**AVAILABLE FOR IMMEDIATE SHIPMENT!**

WRITE TODAY FOR PROFIT MAKING FACTS ABOUT NATICO!

**Remember, something wonderful happens when you add NATICO!**

Pass the word along to your customers—*add* NATICO to feed; *subtract* dollars from feeding costs! NATICO is the new, dry all molasses product—*no carriers, no fillers*—with a guaranteed 48% sugar content that adds attractive color and fragrance to feed. Even makes dry, home-grown grains and roughages tasty. Packed in easy-to-handle 50-lb. bags, NATICO is economical to buy, profitable to sell.

**Natico**

*Product of*
THE NORTH AMERICAN TRADING & IMPORT COMPANY
*World's Largest Importer of Cane Molasses*
1429 WALNUT STREET • PHILADELPHIA 2, PA.

MIDWEST SALES AGENT—The North American Trading and Import Co., 101 Arsenal St., St. Louis, Mo. Tel.: PRospect 6-0858
SHIPMENTS FROM PHILADELPHIA, PA., AND GRETNA, LA.

# AT LAST

## YOU CAN HAVE ACCURATE DOCKAGE PERCENTAGE

***in one quick glance . . .***

ARMSTRONG PERCENTAGE AND DOCKAGE SCALE

. . . eliminates pencil work. Calculates percentages from weights of 250 to 500 grams. Fast and foolproof. Only one of its kind.

Accepted by farmers as well as grain elevators.

WRITE TO:

**O. B. ARMSTRONG & SON**

**284 DAYTON DRIVE • FAIRBORN, OHIO**


technic Institute, Auburn, Ala.; chm., Merlin T. Bryant, Brundidge Milling Co., North Main St., Brundidge, Ala.

Oct. 24 — Arkansas Poultry Study Day; University of Arkansas Agricultural Experiment Station, Fayetteville, Ark.; chm., R. M. Smith, Poultry Department.

Oct. 30—Nebraska Formula Feed Conference; University of Nebraska, Lincoln, Neb.; chm., Dr. J. L. Adams, Poultry Husbandry Dept.

Oct. 31 — Nebraska Rooters Day; University of Nebraska, Lincoln, Neb.; chm., Dept. of Animal Husbandry.

Oct. 31-Nov. 3 — Florida Nutrition Conference; cruise from Miami to Nassau, British West Indies; chm., J. P. Feaster, Department of Animal Husbandry and Nutrition, University of Florida, Gainesville, Fla.

Nov. 2-5 — National Renderers Assn., Hotel Statler, Washington, D.C.; sec., Miss Jamie C. Fox, 30 N. LaSalle St., Chicago 2, Ill.

Nov. 5-6—Illinois Feed Assn. and Illinois Poultry Improvement Assn.; Armory, Springfield, Ill. (IFA Leland Hotel; sec., Dean M. Clark, Board of Trade, Chicago 4; IPIA, St. Nicholas Hotel; sec., Aubrey Harless, Box 91, Shelbyville, Ill.)

Nov. 7 — Washington Animal Industry Conference; Lower Columbia Junior College, Longview, Wash.; sponsored by State College of Washington, Lower Columbia Junior College and Washington State Feed Assn.; assn. mgr., J. G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Dick Robertson

**PUBLIC RELATIONS** — Honeggers' & Co., Inc., Fairbury, Ill., has appointed Dick Robertson as public relations director, it was announced by E. F. Dickey, executive vice president and general manager of the company. Mr. Robertson was formerly head of the feed service information and advertising promotion department of a large midwest feed manufacturing firm. He graduated from Oklahoma State University in 1951, and since then has worked in the public relations, advertising and sales promotion field. He also served as farm director on two radio and television stations.

Nov. 12-14 — Feed Production School; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 13-14—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Prof. Charles Chance, Wing Hall, Cornell University, Ithaca, N.Y.

Nov. 14—Small Mill Short Course; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn., executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 15—Missouri Sheep Day; University of Missouri, Columbia; chm., C. V. Ross, Animal Husbandry Dept.

Nov. 23-25—Western Grain & Feed Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines, Iowa.

Nov. 30-Dec. 1 — Tennessee Feed Manufacturers Assn.; Noel Hotel, Nashville, Tenn.; sec., Charles H. Warfield, 602 American Trust Bldg., Nashville 3, Tenn.

Dec. 8-9 — Veterinarian-Nutrition Conference; President Hotel, Kansas City; sponsored by Midwest Feed Manufacturers Assn.; exec. vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City, Mo.

1959

Jan. 5-6 — Kansas Formula Feed Conference; Kansas State College,

# Steady Sales, Sure Profits

*are yours when you stock and promote*

## Pilot Brand Oyster Shell

Pilot Brand is a best-seller for feed dealers coast-to-coast. Here are important reasons why:

**Pilot Brand is an ideal eggshell material.**
**Helps poultry raisers get maximum production of stronger-shelled eggs.**
**It's uniformly pure calcium carbonate, kiln-dried.**
**Costs less per usable pound.**
**Hens, chicks, turkeys, poults need it year 'round.**

Powerful national advertising for more than thirty years has constantly increased sales of Pilot Brand and assured profitable repeat business for dealers everywhere.

Remember, there is no adequate substitute for Pilot Brand Oyster Shell. It's a sure-fire business builder.

*Order from your distributor . . . or write to us*

PILOT BRAND OYSTER SHELL FOR POULTRY

**Oyster Shell Products Company**
**Mobile, Alabama**

**Brewers Dried Grains**
**Dried Brewers Yeast**
Primary Source
**The New Century Co.**
3939 So. Union Ave.
Chicago 9, Ill.
Phone: Yards 7-1003

# Farm and Feed Salt NEWS

FROM INTERNATIONAL SALT COMPANY, INC.

## There's a Sterling Blusalt product for every feed-mixing need

**. . . so you can add correct amounts of salt and trace minerals with one product in one simple operation!**

## BLUSALT Usage in Different Feeds . . .

### DAIRY CATTLE FEEDS

| | |
|---|---|
| Calf Starter | 10 lbs. Sterling Supermix Blusalt ❶ per ton. |
| Calf Grower | 25 lbs. Sterling Green'salt ❷ per ton. |
| Complete Dairy Rations | 20 to 40 lbs. Sterling Supermix Blusalt per ton. (high producers need more salt) |
| Dairy Concentrates | 30 to 80 lbs. Sterling Supermix Blusalt per ton. |

❶ **Sterling Supermix Blusalt** . . . made especially for modern livestock feed mixing. Contains highest-quality salt, plus essential trace minerals for maximum growth and feed efficiency: manganese, iron, sulfate sulfur, copper cobalt, iodine and zinc. Anti-segregation agent added. In red and blue 100-lb. bags or bulk.

❷ **Sterling Green'salt** . . . a scientifically balanced trace mineral salt, with 10% phenothiazine added for effective low-level control of certain internal parasites. This is a "plus" salt for your feeds and for resale. In green and red 25-lb. bags with carrying handle and 100-lb. bags.

### BEEF CATTLE FEEDS

| | |
|---|---|
| Steer Fattener | 20 to 30 lbs. Sterling Supermix Blusalt per ton. |
| Cattle Supplements | 40 to 80 lbs. Sterling Supermix Blusalt per ton. |

### POULTRY FEEDS

| | |
|---|---|
| Chick Starter | 10 lbs. Sterling Gold Bond Blusalt ❸ per ton. |
| Broiler Mash | 5 to 10 lbs. Sterling Gold Bond Blusalt per ton. |
| Layer and Breeder (all-mash program) | 10 lbs. Sterling Gold Bond Blusalt per ton. |
| Layer and Breeder (grain and mash program) | 20 lbs. Sterling Gold Bond Blusalt per ton. |

❸ **Sterling Gold Bond Blusalt** . . . a new product of International's Feed and Farm Research! The same fine salt and trace minerals as in Supermix Blusalt . . . but with extra manganese and zinc in the correct proportions to guard against leg weakness in chickens and turkeys. In 100-lb. orange and blue bags or bulk.

### SWINE FEEDS

| | |
|---|---|
| Pig Starters and Growers | 10 lbs. Sterling Swine Supermix ❹ per ton. |
| Pig Finishers | 10 to 20 lbs. Sterling Swine Supermix per ton. |

❹ **Sterling Swine Supermix Blusalt** . . . another special product from our laboratories. Salt plus trace minerals. To guard against Parakeratosis in pigs, it contains extra zinc in readily available form. In 100-lb. bags and bulk.

**NOTE:** For feed mixing, Sterling Granulated Salt is also available. This is a pure white salt used by mixers and manufacturers everywhere. Guaranteed analyses and usage tables on all Sterling Salt products available from International Salt Co. Ask your Sterling representative, or contact our sales office nearest you.

**INTERNATIONAL SALT COMPANY • SCRANTON, PA.**

*Sales Offices:* Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N. J.; Buffalo, N. Y.; New York, N. Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa.; Memphis, Tenn.; and Richmond, Va.

Service and research are the extras in **STERLING SALT**

PRODUCT OF INTERNATIONAL SALT COMPANY, INC.

MEMBER AMERICAN FEED MANUFACTURERS ASSOCIATION

Manhattan, Kansas; chm., Dr. Tom Avery, Poultry Department.

Jan. 6-7—Elevator Business Managers Clinic, Michigan State University, Kellogg Center, East Lansing, Mich.; chm., Earl H. Brown.

Jan. 6-8—National Turkey Federation Convention and Exposition; Veterans Auditorium, Des Moines, Iowa; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 9-10 — Kansas Seed Dealers Assn.; Hotel Broadview, Wichita; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.

Jan. 11-13—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Fleming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 18-20—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

Jan. 26-28 — Southeastern Poultry & Egg Assn., Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Jan. 28-30—American Dehydrators Assn., Shamrock-Hilton Hotel, Houston; exec. vice pres., Joseph Chrisman, Board of Trade Bldg., Kansas City 5, Mo.

Jan. 29-30—Oregon Animal Industry Conference; Oregon State College, Corvallis; sponsored by Oregon State College and Oregon Feed & Seed Dealers Assn.; sec., Russ Hays, 702 Lewis Bldg., Portland, Ore.

Feb. 6-7—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., A. E. Eisenmenger, 2200 University Ave., St. Paul, Minn.

Feb. 9-10—Montana Nutrition Conference; Montana State College, Bozeman, Mont.; chm., Dr. O. O. Thomas, Animal Industry Dept.

Feb. 11-12 — Feed Mill Production School; Leopold Hotel, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 12-13 — Washington State Feed Assn.; Leopold Hotel, Bellingham; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 13-15—Institute of American Poultry Industries' Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; Institute of American Poultry Industries, 59 E. Madison, Chicago 2, Ill.

Feb. 16-18—Midwest Feed Manufacturers Assn., annual convention, Muehlebach Hotel, Kansas City, executive vice president, Lloyd Larson, 20 West Ninth St., Kansas City, Mo.

Feb. 22-24—Colorado Grain, Mill & Feed Dealers Assn.; Shirley Savoy Hotel, Denver, Colo.; sec., Olaf Erickson, 714 Cooper Bldg., Denver 2, Colo.

Feb. 23-26 — Colorado Livestock Days; Colorado State University, Ft. Collins, Colo.; chm., Dr. Lamar Esplin.

Feb. 24-25—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; co-chm., Wm. G. Ritchie, J. S. Ritchie & Sons, Petersburg, Va., and Paul M. Reaves, professor Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.

March 1-3 — Ohio Grain & Feed Dealers Assn., Inc.; Neil House, Columbus, Ohio; sec., G. E. O'Brien, 710 N. Ohio Street, Greenville, Ohio.

March 19-20—Oregon Feed & Seed Dealers Association; Multnomah Hotel, Portland; sec., Russ Hays, 702 Lewis Bldg., Portland 4, Ore.

March 19-20—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. Richard D. Creek, Poultry Husbandry Department, University of Maryland, College Park, Md.

March 25—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

April 12-17—Grain Elevator & Processing Superintendents; Multnomah Hotel, Portland, Ore.; sec., Dean M. Clark, 1120 Board of Trade Bldg., Chicago 4, Ill.

April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 8-10 — Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

May 11-13—American Feed Manufacturers Assn. Convention and National Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 15-16—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9 — Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

July 10-14 — Georgia Feed Assn.; General Oglethorpe Hotel, Savannah, Ga.; sec., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

## Colorado Cattlemen Favor Marketing Order

FT. COLLINS, COLO.—The Colorado Cattle Feeders Assn. voted in favor of a proposed beef marketing order at their 4th semi-annual meeting recently at Colorado State University. The margin of approval was 29 to 22.

It was the first formal acceptance of the plan. If approved by other farm and livestock organizations, the order would call for an assessment on all beef sold, with the proceeds spent on a beef promotion and advertising campaign.

Louis Bein, Berthoud, Colo., president of the association, said more than $100,000 could be made available each year to promote beef if the marketing order wins approval.

### INSTALL STORAGE TANKS

JUNCTION CITY, ORE. — Fred McNeil, representative of Fisher Flouring Mills Co., Seattle, Wash., recently described a plan to this community's city council for installation of five Butler storage tanks for grain and feed storage. The tanks will occupy an area 14 by 50 ft., will be 42 ft. high and will cost about $6,000. They will be located on the Oregon Electric spur, Mr. McNeil said.

THE WESTERN FEEDLOTS REPORT . . .

"FROM A FASTER START TO A FINER FINISH,

FEED 'EM DYNAFAC!"

"You can almost see them growing . . . those slick hair coats and big briskets are what I like . . . no scours at all since we started feeding Dynafac . . . man, what a difference in feed costs!"

These are the comments being made by feedlot operators all over the West. They have proved it to themselves...and so can you...that feeding Dynafac gives bigger profits. That is because it takes less feed per pound of gain.

Operators report good results using both Dynafac and hormones, either oral or implant. Each additive works in its own way to give you improved efficiency. Not a hormone, Dynafac remains in the intestinal tract to do its job—controls harmful bacteria and fungi without disturbing beneficial organisms in the paunch.

Dynafac costs less than a penny a head per day! Feeders tell us they get their best weight gains and feed conversion feeding this low-cost additive at the 2-gram-per-head-per-day level.

You, too, can make bigger profits by feeding Dynafac. Why not get it into your feed now?

ARMOUR AND COMPANY, CHICAGO, ILLINOIS

Dynafac is distributed nationally for Armour by the Chemical Department, McKesson & Robbins, Inc. Write us for further information.



**SCROGGINS GRAIN CO.**

Phone FE 5-3913 — Teletype: MP 344

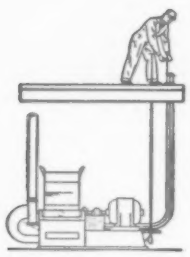
WHOLE and GROUND GRAINS and SCREENINGS

MINNEAPOLIS, MINNESOTA

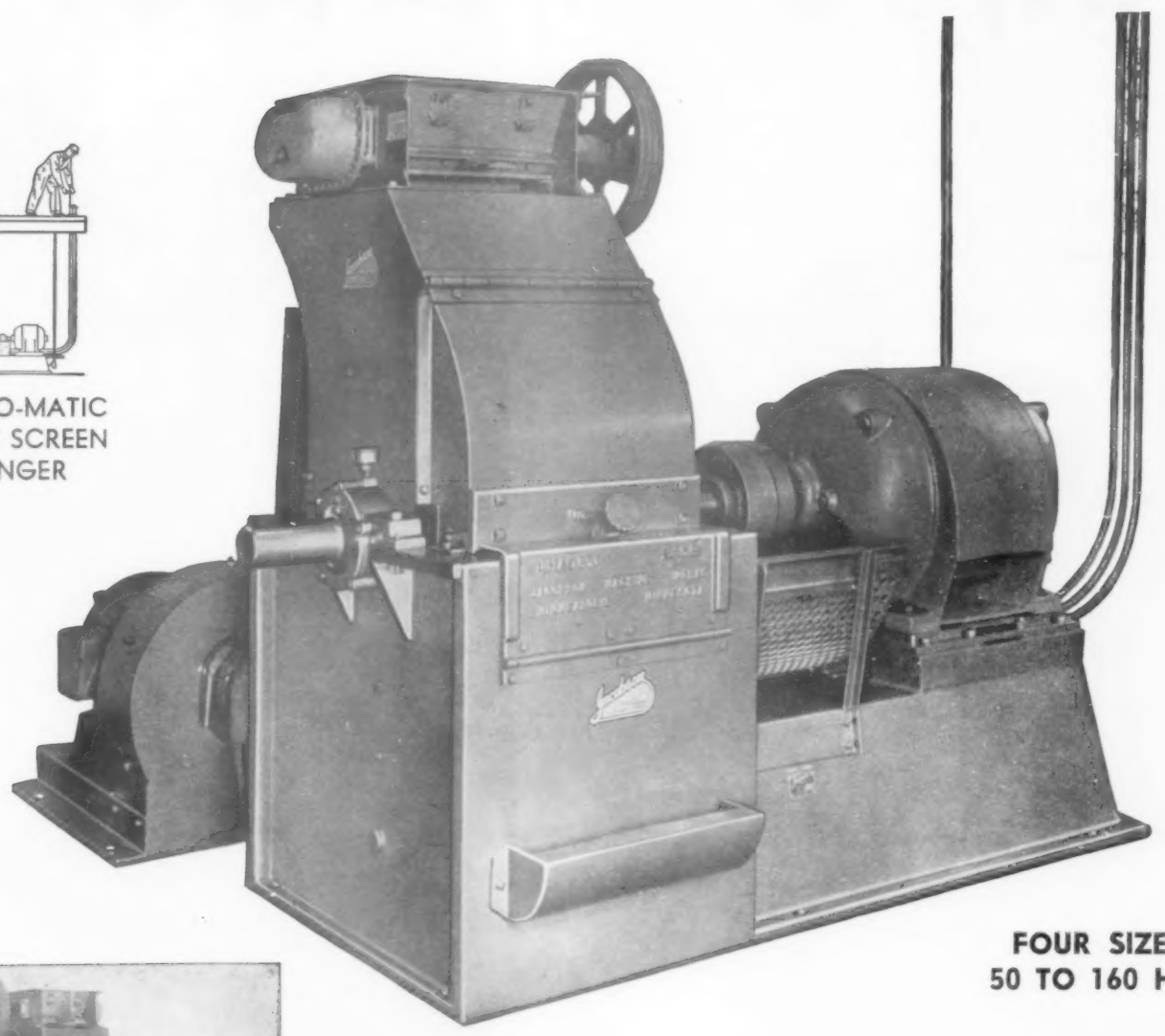
Jacobson QUALITY

# AJACS O MATIC

## REMOTE SCREEN CHANGE HAMMERMILL



AJACS-O-MATIC
REMOTE SCREEN
CHANGER



FOUR SIZES
50 TO 160 H.P.

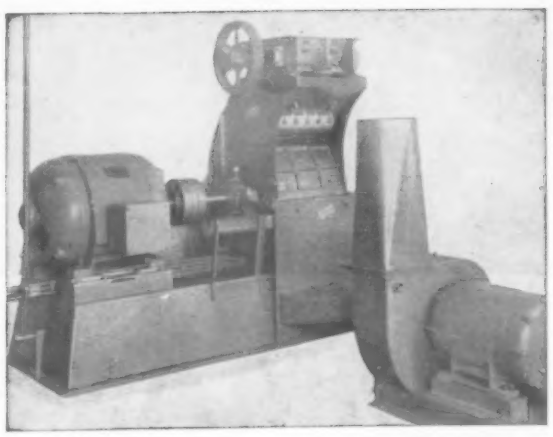


Illustration shows separate motor driven fan and permanent magnet. Attached fan also available.

*Yours . . . to make custom grinding more profitable!*

- Instant choice of three screens
- Quick substitution of other sizes—no tools
- Crusher housing shown—also available with open throat for hay grinding

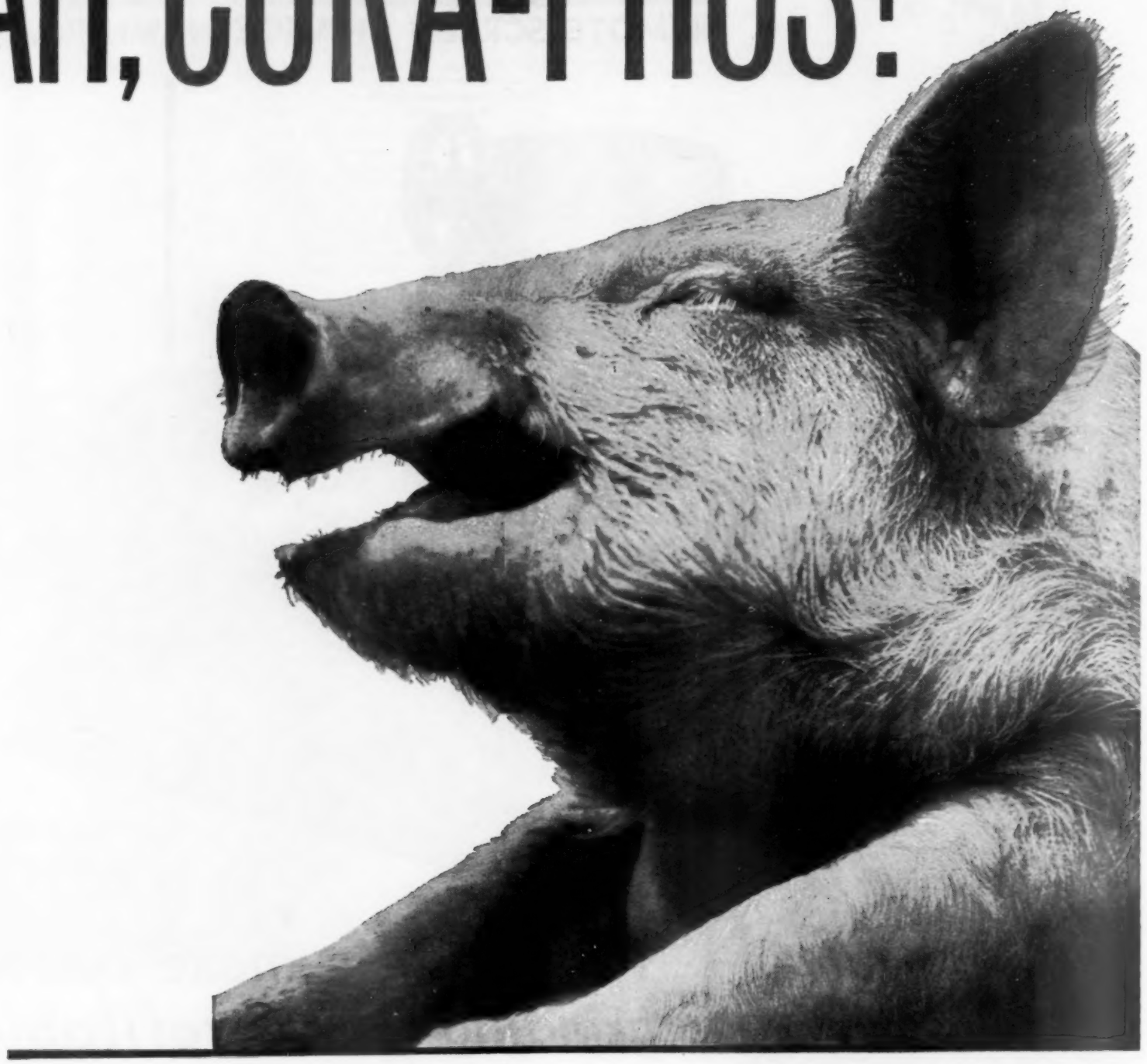
*Write for Bulletins and the Name of Your Jacobson Sales Representative*

## JACOBSON MACHINE WORKS

*48 Years of Continuous Service to the Feed Industry*

1090 TENTH AVE. S. E. DEPT. M MINNEAPOLIS 14, MINNESOTA

# AH, CURA-PHOS!



Great for livestock. And poultry, too. Matter of fact, there's nothing else better. Cura-phos® is ground phosphate rock from the island of Curacao. It comes from no other place in the world. It's a rich, natural product obtained from nature's stockpile of mineral wealth. Highest quality. Highest availability. Guaranteed analysis — 14% phosphorus and 31% calcium, and no more than 0.5% fluorine. Cura-phos helps build the feeds that help grow the profits for all poultry and livestock. No wonder over one million tons have been gobbled up by the feed industry.

ESTABLISHED 1850

**H. J. BAKER & BRO.**

NEW YORK • CHICAGO • SAVANNAH
ATLANTA • TAMPA

*serving the feed industry for 108 years*

## *Grapefruit Tested As Roughage for Cattle in Arizona*

TUCSON, ARIZ. — Grapefruit silage has a fairly high value as a part of cattle roughage, says A. M. Lane, livestock specialist for the University of Arizona Agricultural Extension Service.

Research recently completed at the Arizona Agricultural Experiment Station shows that grapefruit silage has better than 40% of the value of alfalfa hay when it makes up two thirds of the roughage portion of a cattle ration, he said.

The grapefruit was a by-product of the Yuma-Mesa Fruit Growers' processing plant at Yuma, Ariz. It consisted of small whole grapefruit, rinds, pulp and seeds. This material was ensiled in a trench silo with alternate layers of Bermuda straw. About 60% of the silage was grapefruit, the remaining 40% Bermuda straw. The grapefruit by-product was not processed in any way, but merely dumped into the silo and spread between layers of Bermuda straw.

Mr. Lane said definite problems were encountered with feeding grapefruit silage. The silage was not very palatable. Steers at first ate the Bermuda straw, then small pieces of rind, but refused the whole grapefruit.

"Early in the trial it was apparent that the steers had a craving for salt. By replacing the block salt with ground rock salt, the consumption of both salt and silage was increased," the livestock specialist noted.

"Gains were improved by increasing the grain level in one lot, but those steers sold no higher than the other lots that received about 8-9 lb. of concentrates daily.

"With unpalatability being the major problem of citrus silage, there is a possibility that cutting or slicing the grapefruit prior to ensiling would help. Another answer might be using smaller amounts of silage in relation to alfalfa hay—perhaps no more than one half silage and one half hay —as the roughage portions of the ration."

## G.L.F. to Hold 38th Stockholders Meeting

ITHACA, N.Y.—Cooperative G.L.F. Exchange, Inc., with 115,000 farmer-members in New York, New Jersey and northern Pennsylvania, will hold its 38th stockholders annual meeting Oct. 23-24 at the Oncndaga County War Memorial, Syracuse, N.Y.

Members attending will see an array of G.L.F. commodities in a 45,000 sq. ft. farm show taking up the entire lower floor of the Memorial building.

The main business meeting will feature reports on volume and earnings during the last fiscal year, and predictions of things to come in the year ahead. Seven directors will be elected for two-year terms at the meeting.

Each community where there is G.L.F. service will be represented by its elected member committee and the local G.L.F. service agency manager. An estimated, 3,000 committeemen and 900 local agency managers are expected to attend.

### FLAT STORAGE ADDED

CANTON, KANSAS — The Farmers Cooperative Grain & Supply Co. has started construction on an additional 51,000 bu. of flat-type grain storage here, C. L. Russel, manager, announced. The steel building will be 40 by 100 ft., and when completed will give the firm a total storage of 280,000 bu.


CORN SHELLER OPERATORS IS THIS WORTH ITS WEIGHT IN GOLD..?

No, but this common stone may cost you its weight in gold if it enters your sheller.

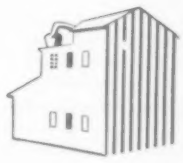
The Anderson STONE SLEUTH is a *proven* remedy to this headache.

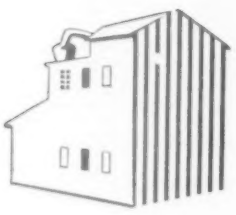
*Here is a modern instrument guaranteed to detect stones and other foreign objects present among ear corn before they can cause breakdowns and costly delays in your shelling operation. Let us tell you how the STONE SLEUTH can save you money.*

FOR INFORMATION, WRITE: The Andersons MAUMEE, OHIO

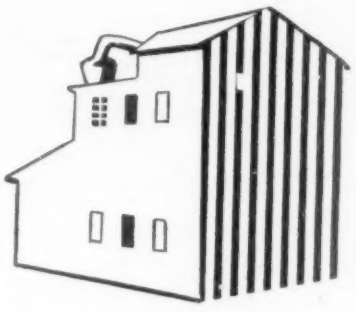
GROWING...

by feeds and services—





*Ultra-Lifed Feeds and Services that is.*



And there's a reason. The Ultra-Lifed Program gives you more than feed fortifications. It gives you exclusive vitamin and trace mineral blends to make feeds second to none in quality, but that carry a greater profit margin for you. In addition, Ultra-Life helps you sell your feeds with exclusive feeding programs and sales programs.

From the Atlantic to the Pacific, from Canada to South America, Ultra-Life fortifications and services for you are unmatched.

**The revised edition of the Ultra-Life Book is now available—contains latest ingredient analysis information, energy tables, feed price conversions, and many other tables and charts of value to feed manufacturers. Write today on your letterhead for your free copy.**

Ultra-Life LABORATORIES, INC.

Main Office and Plant East St. Louis, Illinois

One of the Country's Oldest and Largest Manufacturers of Vitamin and Trace-Mineral Products

ELAM GRAIN COMPANY

Complete line of grains and soft feeds

Processors and handlers of brewer's grains

St. Louis elevator... 2,500,000 bushels capacity

*Call St. Louis* OLive 2-5550

# Worth Looking Into

**New Products**
**New Services**
**New Literature**

**This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.**

## No. 7201—Poultry Health Product

A poultry health product designed to stimulate growth and egg production, prevent disease and control stresses and actual disease outbreaks has been developed by Pabst Brewing Co. Called "Pabstgard," the active antibiotic in the product is Bacitracin, a "selective action" drug which helps destroy harmful bacteria without interfering with the organisms needed in normal poultry body processes, the company says. According to a company official, "Pabstgard" will be available in the Midwest this fall and distribution will be expanded to other parts of the country later this year. Details can be secured by checking No. 7201 on the coupon and mailing to this publication.

## No. 7204—Pellet Mill Dies

Development of a new series of high alloy pellet mill dies has been announced by Sprout, Waldron & Co., Inc. A company official said some of the advantages of the new pellet mill dies include lower cost per ton for production of pellets, harder and longer wearing, higher corrosion resistance, smoother drilled holes and longer service life at unit prices. Check No. 7204 on the coupon and mail to this publication for more details.

## No. 7202—Worm Control Booklet

Rhodia, Inc., has published two brochures describing the use and efficacy of Piperazine for the elimination of various internal parasites in swine, poultry, cattle, horses, dogs and sheep. The brochure illustrates how Piperazine meets the requirements of a worming agent. Check No. 7202 on the coupon and mail to this publication for details.

## No. 7206—Bulk Feed Report

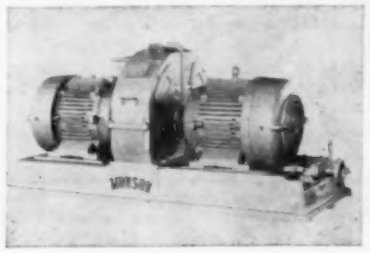
A report on "Bulk Feed—Why and How" has been prepared by the bulk delivery division of Dorsey Trailers. The article was written by George Ford, a Dorsey feed specialist, and discusses storage facilities for various applications as well as bulk transportation equipment. Details can be secured by checking No. 7206 on the coupon and mailing.

## No. 7207—Feed Additive

A feed additive processed from the seaweed, Oscophyllum Nodosum, is being introduced by Algit, Inc. The product is named Algit 60-12 from the 60 minerals and 12 vitamins it contains, the company says. The material is a dry, meal-like product, free-flowing and non-hygroscopic, Algit stated. Algit claims that "fed at the ½% level in animal and poultry rations, the additive has been found to increase gains and production in livestock, as well as improve over-all appearance and condition." Check No. 7207 on the coupon and send for details.

## No. 7199—Attrition Mills

A line of ball bearing attrition mills is being offered by Munson Mill Machinery Co. The mills can grind products fine enough to pass through a 250-mesh screen, the company states. The bed of a Munson attrition mill is a rigid, one-piece seasoned



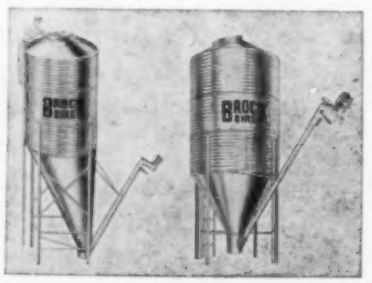
gray iron casting. The adjusting end of the machine slides out for inspection of interior and change of plates. The design of the discharge spout permits free flow of ground material and affords a convenient connection to conveying equipment, the company says. For more details check No. 7199 on the coupon and mail to Feedstuffs. Please print name and address.

## No. 7203—Poultry Disease Book

A 16-page booklet, entitled "Dr. Salsbury's Poultry Disease Briefs" has been published by Dr. Salsbury's Laboratories. The booklet contains information on poultry worms and wormers, findings on E. acervulina coccidiosis and bloody scours in hogs. According to the company, "Disease Briefs" is the result of requests by industry people who wanted an up-to-date source of information on poultry and swine diseases. The booklet is published quarterly. Check No. 7203 on the coupon and mail to this publication for details.

## No. 7198—Bulk Feed Bins

The Brock Manufacturing, Inc., has introduced two bulk feed bins, one a center-draw model and the other a new-design, side-draw model. Both have slanting fill hole, 22 in. in diameter, which permits filling the entire bin. Constructed of heavy gauge zincgrip steel, the bins utilize truss-head bolts, neoprene washers and



caulked seams. The boot and slide valve are also weatherproof. Also featured is a 4-in. diameter, 12-ft. long auger which delivers feed at 400 to 600 bu. per hour. The side-draw feature reduces bridging of contents and permits easy action, the company states. For further information, check No. 7198 on the coupon and mail. Please print or type.

## No. 7200—Display Promotion

Two fall promotions to be used as profit builders for animal health products are being offered by Ameri-

can Cyanamid Co. An Aureomycin Crumbles promotion features a floor display which holds four bags of Crumbles. The Aureomycin mastitis products promotion is designed to tie in with consumer promotion starting in November. Each deal will consist of a one-gross order of mastitis ointment or suspension in any combination. Check No. 7200 on the coupon and mail for further details.

## No. 7205—Spring Truck

The Everlevell Co. announces a new economical spring truck. The company says the truck eliminates operator's fatigue by maintaining constant working level. A change of 3 lb. will readjust the platform to proper working height of about 29 in. from floor level. The truck handles up to 500 lb. and can be constructed to different weight requirements. Units can be custom manufactured in different sizes for special applications, the company says. For more details, check No. 7205 on the coupon and mail to this publication.

## No. 7188—Modern Farming Film

The recent introduction of "do-it-yourself" construction to steel farm buildings is the topic of a 16 mm color sound film, "The New Look in Modern Farming," released by Stran-Steel Corp. Shown in detail is the complete erection of an all-steel pole barn by four men in one week. For further details, check No. 7188 on the coupon and mail. Please print or type.

## No. 7189—Poultry Vaccination Booklet

An 8-page booklet containing recommendations for all types of poultry vaccination, under conditions prevailing in all farming areas, is available from Vineland Poultry Laboratories. The booklet, prepared by Dr. Tevis M. Goldhaft, an authority on poultry vaccines and vaccination procedures, contains information on mass vaccination, revaccinations, pox vaccination and vaccination schedules. Check No. 7189 on the coupon and mail for details. Please print or type.

## *Also Available*

**The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.**

**No. 7144**—Cob blowing corn sheller, Triumph Division, C. O. Bartlett & Snow Co.

**No. 7145**—Twin-hook hoist carrier, Cleveland Tramrail Division, Cleveland Crane & Engineering Co.

**No. 7146** — "Janitorial" clean-up

Send me information on the items marked:

- ☐ No. 7188—Modern Farming Film
- ☐ No. 7189—Poultry Vaccination Booklet
- ☐ No. 7198—Bulk Feed Bins
- ☐ No. 7199—Attrition Mills
- ☐ No. 7200—Display Promotion
- ☐ No. 7201—Poultry Health Product
- ☐ No. 7202—Worm Control Booklet
- ☐ No. 7203—Poultry Disease Book
- ☐ No. 7204—Pellet Mill Dies
- ☐ No. 7205—Spring Truck
- ☐ No. 7206—Bulk Feed Report
- ☐ No. 7207—Feed Additive

(PLEASE PRINT OR TYPE)

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

——— CLIP OUT — FOLD OVER ON THIS LINE — FASTEN (STAPLE, TAPE, GLUE) — MAIL ———

FIRST CLASS PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Feedstuffs

P. O. Box 67

Reader Service Dept. Minneapolis 40, Minn.

cart, Screw Conveyor Corp.

**No. 7147**—Aureomycin guide booklet, Agricultural Division, American Cyanamid Co.

**No. 7148**—Hog programming chart, Ranger Equipment Co.

**No. 7149**—Baled hay grinder, Barnard & Leas Manufacturing Co., Inc.

**No. 7150**—Granular phosphate leaflet, Coronet Phosphate Co.

**No. 7151**—Automatic bag printer, Industrial Marking Equipment Co.

**No. 7152**—Settler for bag packers, H. L. Stoker Co.

**No. 7153**—Bulk storage tank, Butler Manufacturing Co.

**No. 7154**—Cob bin unloader, Thoro-Speed Corp.

**No. 7155**—Bulk feed storage tanks, Day Sales Co.

**No. 7156**—Poultry disease guide, Dr. Salsbury's Laboratories.

**No. 7157**—Automatic flat drop machine for testing filled multiwall bags, St. Regis Paper Co.

**No. 7158**—Grain fumigant pump, Tryco Manufacturing Co., Inc.

**No. 7159**—Pneumatic bulk truck with 9-in. screw conveyor, Sprout, Waldron & Co.

**No. 7160**—Portable pump for grain fumigants, Douglas Chemical Co.

**No. 7161**—Bulk feed unit, Seco, Inc.

**No. 7162**—Basic pneumatic handling systems for bulk materials, Fuller Co.

**No. 7163**—Literature on buildings, Steel Structures, Inc.

**No. 7164**—Pneumatic bulk trailer, blending device, Seedburo Equipment Co.

**No. 7165**—Bagging scale bulletin, Richardson Scale Co.

**No. 7166**—Grain aeration system, Monroe Grain Aeration Co.

**No. 7167**—Agricultural films, American Cyanamid Co.

**No. 7168**—Feed lot automation bulletin, Sprout, Waldron & Co., Inc.

**No. 7169**—Belt conveyor, Bunke-Musser, Inc.

**No. 7170**—Bulk delivery body, Dorsey Trailers, Inc.

**No. 7171**—Collecting systems for hammermills, Sprout, Waldron & Co., Inc.

**No. 7172**—Bag-bulk delivery body, Dorsey Trailers, Inc.

**No. 7173**—Pig and poultry feed unit, J. B. Sedberry, Inc.

**No. 7174**—Industrial fan bulletin, Day Sales Co.

**No. 7175**—Packaged gas producing equipment, Southwest Industries, Inc.

**No. 7176**—Rental program for Tote bins, Tote System, Inc.

**No. 7177**—Poultry feed fortification product, Borden Co.

**No. 7178**—Automatic tubular water warmer, Smith-Gates Corp.

**No. 7179** — Handbook on copy boards, Wagner Sign Service, Inc.

**No. 7180**—Bulk shipping container, Ohio Boxboard Co.

**No. 7181**—Steel buildings in color, Stran-Steel Corp.

**No. 7182**—Grain drying equipment catalog, Aeroglide Corp.

**No. 7183**—Broiler, layer coccidiostat, American Cyanamid Co.

**No. 7184**—Four-ton capacity bulk feed bin, Leach Manufacturing Co.

**No. 7185**—Automatic bag closure literature, Aeroglide Corp.

**No. 7186** — Automatic "tare-out" system, Richardson Scale Co.

**No. 7187**—Bulletin on pneumatic conveyor design, Sprout, Waldron & Co.

**No. 7190** — Feeding trial results brochure, Flavor Corporation of America.

**No. 7191** — Trough-belt conveyor, Universal Hoist Co.

**No. 7192**—Grain roller mill, W-W Grinder Corp.

**No. 7193**—Vacuum barrel handling unit, Vac-U-Lift Co.

**No. 7194**—Grain fumigator, Seedburo Equipment Co.

**No. 7195**—Bulk-bag feed body, Henderson Manufacturing Co.

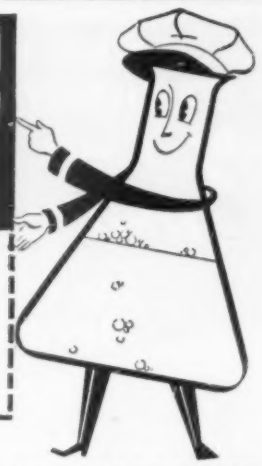
**No. 7196** — Fourteen-hole laying nest, Oakes Manufacturing Co.

**No. 7197**—Peebles' 50-lb. red whey block, Western Condensing Co.


SOLULAC

70% corn distillers solubles
30% corn distillers grains

PRODUCED AND AVAILABLE EVERY WEEK OF THE YEAR



GRAIN PROCESSING CORPORATION
MUSCATINE, IOWA Telephone AMherst 3-1321 TWX495

© 1957

Primary Fermentation Products
*Riboflavin — Vitamin B-12 — GP-101, source of whey and other unidentified growth factors*



Egg Shell Quality
*begins with*
EGGSHELL BRAND
Oyster Shell

Poultrymen are being told the EGGSHELL BRAND story in advertisements and point-of-purchase displays wherever EGGSHELL BRAND Oyster Shell is sold.

Take advantage of this complete promotional program. Sell the really digestible, soft reef shell that has become the standard of the industry.

EGGSHELL BRAND OYSTER SHELL
*a product of*
OYSTER SHELL CORPORATION
BALTIMORE, MARYLAND



SW

Data Sheet

Sprout-Waldron

Pneu-Vac® (negative pressure conveyors)

cleaner

faster

safer

more economical

general specifications

| Collector Diameter | Collector Height (Less Motor) | Collector Weight in Pounds | Recommended Airlock Size |
|---|---|---|---|
| 13 | 68⅞ | 717 max. | 6 x 4 |
| 16 | 81⅞ | 940 max. | 8 x 6 |
| 20 | 100¼ | 1005 max. | 8 x 6 |
| 28 | 132½ | 1995 max. | 14 x 10 |
| 36 | 153½ | 2465 max. | 16 x 14 |
| 44 | 181 | 3685 max. | 16 x 14 |

The Sprout-Waldron negative pressure or draw-through conveying system has the fan located on the opposite side of the collector from the material conveying line so that the product is not carried through the fan. Since the air conveying lines are under negative pressure and are sealed to maintain a positive air balance, exterior dusting is eliminated and there is no loss of materials. With a minimum of moving parts — none in the vicinity of the operator — there is practically no risk of personal injury, even to an unskilled man.

These extremely flexible units can cool, dry, heat, aerate. They provide a self-cleaning, versatile, highly efficient pneumatic system.

construction details

From top to bottom, Pneu-Vac is precision built. A dynamically balanced, high speed fan provides adequate air to move materials efficiently. The specially designed collector, with its sealed, easily-removed inspection door, assures peak operation and easy maintenance. Where required, the collector can be furnished with a replaceable abrasion-resistant lining at the inlet. The integrally mounted rotary valve has a full-length, removable cleanout panel; outboard anti-friction bearings; packing glands; individual motor and drive. The rotor is machined to very close tolerances, so that the valve serves as an airlock during the discharge of the Pneu-Vac collector.

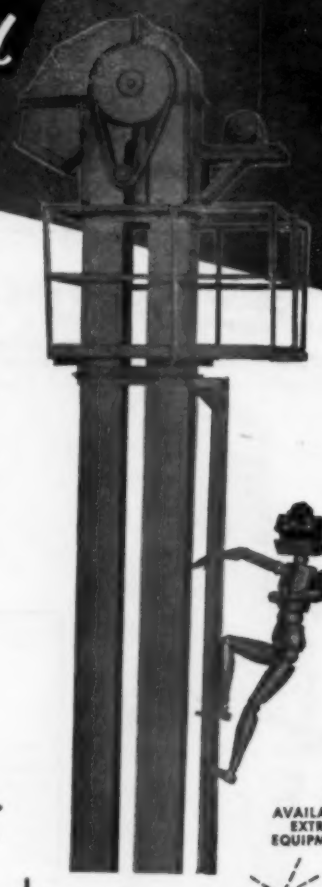
Full details, applications and advantages are given in Bulletin 18-E. Write for your copy today.

FD/110

SPROUT-WALDRON
*The Best in Processing Equipment Since 1866*
MUNCY, PENNSYLVANIA, U.S.A.
*Modern equipment for—size reduction • mixing and blending • bulk handling equipment • size classification • pelleting and cubing*

REACH NEW HEIGHTS OF EFFICIENCY and PERFORMANCE...

with Universal bucket elevators



"Bucky" Elevator says, "with Universal Bucket Elevators you can have any exact height in capacities from 50 to 3,000 bushels per hour."

THROUGH RESEARCH AND MODERN PRODUCTION METHODS UNIVERSAL OFFERS YOU . . .

ADVANCED DESIGN — More compact, cleaner operating, smoother running.

GREATER ECONOMY — Low initial cost, low operating cost, minimum maintenance and repair.

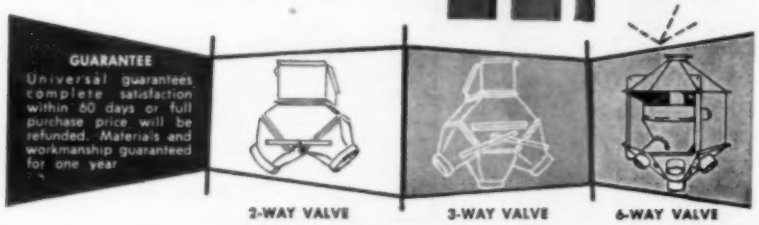
EASIER INSTALLATION — Jig assembly at the factory assures precision fitted components. Elevator length or capacity is easily changed with perfect-match parts.

QUICK DELIVERY — Production line methods and rigid quality control assure fast delivery of all models. Parts are kept 'in stock' to avoid costly shutdowns.

SEND FOR FREE LITERATURE AND PRICES.

Universal HOIST CO.
BOX 101 CEDAR FALLS, IOWA

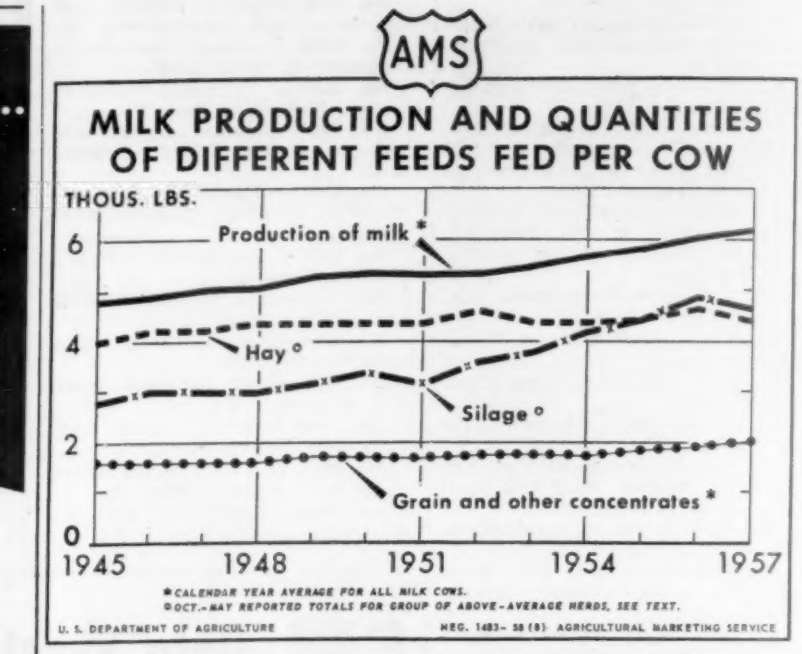
AVAILABLE EXTRA EQUIPMENT


GUARANTEE
Universal guarantees complete satisfaction within 60 days or full purchase price will be refunded. Materials and workmanship guaranteed for one year
2-WAY VALVE
3-WAY VALVE
6-WAY VALVE

CALL Babe or Bob Stuart for
★ MILL FEEDS ★ LINSEED MEAL ★ SOYMEAL
★ ALFALFA MEAL ★ SCREENINGS
RELIANCE FEED CO. FOR 31 YEARS Phone FE 2-2418 216 Phoenix Bldg. Minneapolis, Minn.



TEXAS MILL EQUIPMENT CO.
MILL FURNISHERS
ROLL GRINDING ROLL CORRUGATING
FOR FLOUR, FEED, RICE AND OIL MILLS
167 Payne St. • Dallas 7, Texas • Riverside 8-2795


**DAIRY RATIONS—This chart, published recently by the Agricultural Marketing Service, U.S. Department of Agriculture, shows that the increase in milk production per cow has been matched by increases in quantities of concentrates and roughages fed. The increase in concentrates fed has been sufficient to account for about two thirds of the gain in milk output per cow over the past decade. The quantities of roughages fed, however, also have been increased, partly as a supplement to feed from pastures. The quantity of silage fed to milk cows increased relative to hay until 1955, but in the past few years the two have shown the same small changes and both reached a record high last season.**

## Continued High Prices Of Feeder Cattle Seen

KALAMAZOO, MICH.—A Chicago livestock commission salesman just back from a month-long trip to the West and Northwest, says indications are that prices of replacement cattle will remain high.

Speaking at a recent meeting here, Harlan Bane said: "Prices of replacement cattle are high, the rancher is in a strong position and knows it, and competition for feeder cattle is rugged." Mr. Bane is a salesman for the Walters & Dunbar firm at the Chicago livestock yards.

"There is an abundance of feed everywhere you look, and ranchers are keeping cattle on the range because of excellent feed and weather conditions. This will make the heavy run of lightweight calves a month to a month and a half late this year," he said.

Mr. Bane mentioned "a lot of money" being made in the past year by big, commercial feedlot operators who subsequently expanded their operations and now must fill even bigger feedlots, thereby furnishing rough competition.

He said Texans are heading north to invest oil money in huge ranches —even buying up whole valleys— where they can raise calves to yearling status.

Mr. Bane described the price picture as "highly unsettled." He told of some of the poorest calves in Montana bringing 31¢ lb., while a few days later good ones went at 29¢.

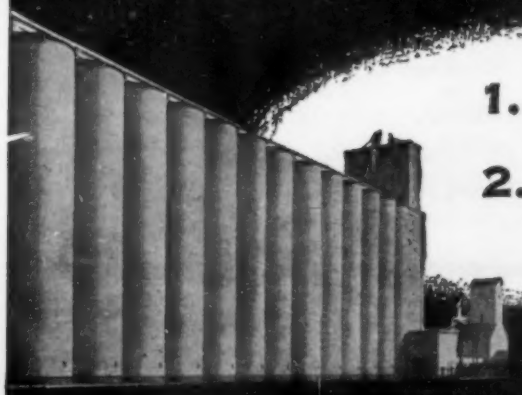
"Generally, steer and heifer calves are being contracted for late October delivery at 30-31¢, with fancy calves bringing 40-41¢. The bulk of Montana yearlings have been contracted for at 25-25.5¢, good yearlings in Wyoming at 27-28¢. Most two-year-olds are going for 23¢, with some up to 26¢," he said.

"More and more yearlings are being implanted in the West with stilbestrol or some other growth stimulator. Whether the finisher will benefit from this is a controversial subject."

## Change of Address

MILWAUKEE—Guy H. Coons & Sons, Milwaukee, feed ingredient broker, has announced that the firm's office has been moved from 739 N. Broadway, Milwaukee, to a new location at 8416 W. Lisbon Ave., Milwaukee. The telephone number is HOpkins 4-5080.


OUR "FORMULA"... for serving the formula feed mixers



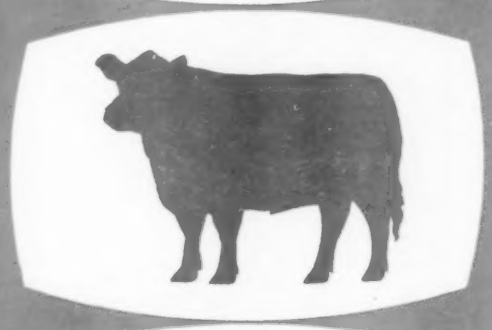
1. A QUALITY PRODUCT— FROM THE CREAM OF THE SOYBEAN CROP
2. SERVICE— FROM OUR MILL TO YOURS .... AS SCHEDULED!

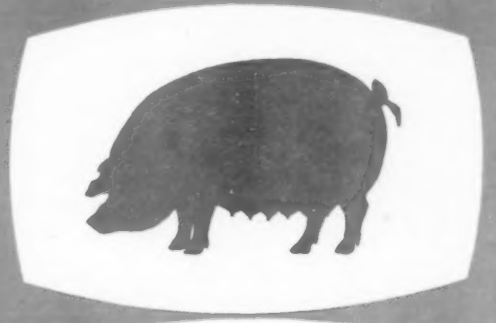
*Here's a formula that works.... FOR YOU!*

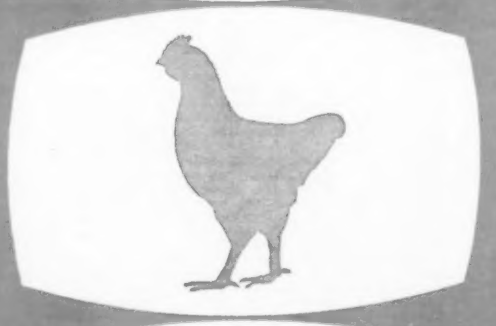
KANSAS PHONE 3000 Soya PRODUCTS CO., INC. EMPORIA, KANSAS

D.F.E. DIRECT FROM EMPORIA

## In DAWE'S Vitamelk Programs







# dependability makes the difference

Program your feed business the Vitamelk way. Dawe's Vitamelk program represents far more than fortification products. It is a way of doing business on the basis of having a nutritional laboratory affiliation. Dawe's dependable professional services will provide you sound counsel and relieve you of many of the details of managing a successful feed business. You will have added assurance that you are supplying your customers top-quality feeds.

### This Is the Vitamelk Program

1. **VITAMELK**—a comprehensive vitamin, trace mineral, antibiotic and unidentified factors fortifier. *Full* fortification in one package.
2. **COMPLETE FORMULATIONS** for farm-tested feeds.
3. **TAG INFORMATION** for today's complicated feed tag requirements.
4. **COMPLETE FEEDER INSTRUCTIONS** on how to use Vitamelk-fortified feeds to best take advantage of their great built-in power.
5. **DAWE'S QUALITY CONTROL** laboratories are a remarkable help in solving special problems.
6. **MERCHANDISING** and sales counsel.
7. **CONTINUING RESPONSIBILITY** for applying the latest nutritional knowledge to *your* feeds.

Dawe's specialized nutrition, manufacturing and merchandising know-how is yours—yet you pay for Vitamelk only—when you program your business the Vitamelk way. Write for specific information on complete programs for poultry, swine, beef and dairy cattle.

**FOREIGN OFFICES:**

Belgium—13 Courte rue des Claires, Antwerp
Italy—Corso Magenta 81/83, Milan
Mexico—Sierra Leona 755, Mexico 10, D. F.
Venezuela—Apartado 3050, Caracas

Dawe's

**World's Oldest and Largest Specialists in Vitamin Products for Feeds**

**DAWE'S LABORATORIES, INC.**—4800 South Richmond Street, Chicago 32, Illinois

for the
FEED INDUSTRY
- Chemical Analyses
- Vitamin Assays
- Drug Assays
- Spectrographic Analyses
- Chick Feeding Tests
- Consultation
- Formula Reviews

Write for Schedule of Charges
FEED SERVICE DIVISION
LIME CREST RESEARCH LABORATORY
R. D. 1, Box 67 Newton, New Jersey
LIMESTONE PRODUCTS CORP. OF AMERICA

Your best way to burn refuse!

Burns refuse from 3000 bushels of corn per hour . . .

COMPARE!
- Much faster.
- Safer, often lowers insurance rates.
- Burns more completely.
- Feeds automatically.
- Seldom requires cleaning.
- Blower speeds burning of damp refuse.
- Needs no watchman.
- Saves moving refuse far from plant for burning.
- Passes safety and Forest Service requirements.
- Only Rees Burners are proven for grain-mill refuse.

Built With 40 Years of Experience

Unconditionally guaranteed better than other burners of this type. A Rees Burner costs much less than you think. Mass production for such firms as Quaker Oats, Long Bell Lumber Co., Ford Motor Co., and many others makes the price quite low. Your plant labor can easily erect a Rees Burner in a few days. No crane needed. We will manage construction, if desired.

FREE! Send for illustrated literature

Rees Burner & Blowpipe Co.
205 So. Front St.
Memphis, Tenn.
Please send me information on the Rees burners.
Name ____ Position ____
Firm ____
Address ____

REES BLOWPIPE MANUFACTURING CO.
BERKELEY, CALIF. MEMPHIS, TENN.
VANCOUVER, CANADA

FEEDSTUFFS
A WEEKLY NEWSPAPER
For the Feed Manufacturer, Feed Jobber
Feed Broker and Feed Dealer

# Index for August, 1958

Volume 30 Numbers 31-35

*First number denotes issue date; "p" and second number denotes page number.

**ADDITIVES:**
American Society of Animal Production ... *16—p. 56
Firmer Additive Control Seen in New FDA Bill ... 30—p. 1

**ALFALFA:**
National to Produce Alfalfa Hay Pellets ... 2—p. 1

**AMINO ACIDS:**
Du Pont Reduces Price of "Hydan" ... 16—p. 6

**ANTIBIOTICS:**
Additives in a Lamb Fattening Ration ... 16—p. 18
Antibiotic Dairy Feed Marketed in Oklahoma ... 16—p. 93
Antibiotics and Hormone Implants for Steers ... 16—p. 87
Antibiotics for Bloat Prevention ... 23—p. 52
Blood Values and Growth of New-Born Pigs Following Subcutaneous Implantation of Bacitracin Pellets ... 30—p. 18
Cyanamid Extends Antibiotic Studies ... 9—p. 54
FTC Antibiotic Report Summary ... 9—p. 88
Maryland Broiler Trial ... 9—p. 36
Methods of Increasing Antibiotic Effectiveness ... 2—p. 1
Montana Researchers Test Additives ... 30—p. 36
Purdue Swine Day ... 23—p. 8
Wisconsin Conferences ... 30—p. 7

**ANTIOXIDANTS:**
Effects of Feeding Various Levels of 2, 6-Di-Tertiarybutyl-4-Methyl-Phenol to Lactating Dairy Cows ... 2—p. 64
Pigmentation Studies With Broilers and Laying Hens ... 16—p. 26

**ARSENICALS:**
Purdue Swine Day ... 23—p. 8

**ASSOCIATIONS:**
Alabama Feed Assn. (Scholarship winner) ... 16—p. 8
American Feed Manufacturers Assn. (FDA fees on medicated feed) ... 2—p. 6
American Feed Manufacturers Assn. (Promotes agricultural careers) ... 2—p. 16
American Feed Manufacturers Assn. (Research award) ... 9—p. 1
American Feed Manufacturers Assn. (Purchasing guides) ... 9—p. 40
American Poultry & Hatchery Federation (Marketing older breeders) ... 16—p. 98
American Soybean Assn. (Convention) ... 30—p. 1
California Hay, Grain & Feed Dealers Assn. (Meeting) ... 23—p. 74
Cincinnati Feed Club (Committees) ... 16—p. 84
Colorado Grain, Milling & Feed Dealers Assn. (Secretary) ... 2—p. 8
Great Plains Agricultural Council (Meeting) ... 30—p. 68
Illinois Feed Assn. (Form first district) ... 23—p. 7
Kansas Seed Dealers Assn. (Convention) ... 23—p. 30
Kentucky Feed & Grain Assn. (Conference) ... 30—p. 10
Mid-South Soybean & Grain Shippers Assn. (Meeting) ... 9—p. 8
Midwest Feed Manufacturers Assn. (To coordinate production school) ... 2—p. 7
Midwest Feed Manufacturers Assn. (Sets short course) ... 9—p. 6
National Broiler Council (Campaign on breeder hens) ... 16—p. 8
National Turkey Federation (Praises new purchase plan) ... 16—p. 100
North Carolina Feed Manufacturers Assn. (Meeting) ... 16—p. 1
Poultry Science Assn. (Awards) ... 16—p. 6
Poultry Science Assn. (Meeting) ... 9—p. 1
Poultry Science Assn. (Nutrition milestones) ... 23—p. 10, 30—p. 8
Poultry & Egg National Board (Survey) ... 16—p. 86
Poultry & Egg National Board (Advisory committee) ... 23—p. 81
Scale Manufacturers Assn. (Meeting) ... 9—p. 54

**AUTHORS:**
Berglund, Roger
Pillsbury Modernizes Feed Mill at Centerville, Iowa ... 9—p. 28
Bernard, Dr. Camille
How Feeding Influences Livestock Reproduction ... 16—p. 10
Blair, Jess F.
Good Management Helps Large Colorado Feedlot Show Profit ... 16—p. 88
Church, Dr. C. C.
Effect of Non-Nutritive Additives in a Lamb Fattening Ration ... 16—p. 18
Combs, G. F.
Maryland Broiler Trial ... 9—p. 36
Conrad, Dr. J. R.
Feeding Hogs Tomorrow ... 30—p. 38
Diser, G. M.
Pigmentation Studies With Broiler and Laying Hens ... 16—p. 26
Dittemore, Paul L.
Eshelman Plant Boosts Capacity, Efficiency and Accuracy With New Automatic Feed Mixing Unit ... 30—p. 26
Feed Company's Egg Program Continues to Grow ... 16—p. 46
Elrod, R. C. (see Diser, G. M.)
Fox, Dr. C. W. (See Church, Dr. D. C.)
Gledhill, R. H. (see Diser, G. M.)
Hayward, J. W. (see Diser, G. M.)
Hyatt, Frieda and Samuel
Dealer Fattens Farmers' Pocketbooks and Keeps His Own Business Healthy ... 2—p. 34
Johnson, Dr. Elton L.
Nutrition Milestones Reviewed at Poultry Science Meeting (Part I) ... 23—p. 10
Nutrition Milestones Reviewed at Poultry Science Meeting (Part II) ... 30—p. 8
Nutrition Progress Outlined at Poultry Science Meeting ... 9—p. 1
Lapidus, Milton
Composition Studies on Meat and Bone Meal ... 2—p. 18
Lempka, Lillian (see Lapidus, Milton)
Mellon, Edward F. (see Lapidus, Milton)
Nelson, Al P.
Farm Supply Store Proves Valuable Addition to Mill ... 2—p. 66
Grain Bank Plan Helps Boost Trade for Eastern Firm ... 16—p. 85
Iowa Mill Outgrows Expanded Plant in Less Than 2 Years ... 23—p. 42
New Equipment Helps Boost Volume of Mill in Illinois ... 9—p. 72
Program of Customer Service Wins Volume for Ohio Dealer ... 30—p. 32
Nicholson, J. L. (see Combs, G. F.)
Robajdek, E. S. (see Diser, G. M.)
Robertson, Dr. E. I.
Putting Today's Research Into Feeds ... 23—p. 18
Schonfisch, R. H.
Feed Mill Batch Proportioning ... 23—p. 76
Sharon, James E.
Iowa Producers Develop Own Quality-Control Egg Plan ... 2—p. 36
Waldron, J. Howard
Planning a Commercial Feed Plant ... 2—p. 28
Witz, W. M. (see Diser, G. M.)

**BRAZIL:**
Wider Feed Market Sought in Brazil ... 2—p. 14

**BULK HANDLING:**
First District of Illinois Association ... 23—p. 7

**CALF FEEDING:**
Calves Have Fewer Worms on Milk Diet ... 16—p. 68

**CANADA:**
Cattle in Canada Show Slight Decrease ... 23—p. 72
Feed Shipments Show Gain ... 9—p. 24
New Swine Disease Reported ... 23—p. 83
27% Swine Increase Estimated ... 2—p. 77
University Studies Dwarfism ... 23—p. 40

**CATTLE FEEDING:**
Kentucky Feed Conference ... 30—p. 10
Poultry Litter as Protein Source ... 23—p. 47

**CHEMOBIOTICS:**
Additives in a Lamb Fattening Ration ... 16—p. 18
Montana Researchers Test Additives ... 30—p. 36

**COCCIDIOSTATS:**
Coccidiosis Symposium in Delmarva ... 16—p. 64
Cyanamid to Introduce New Coccidiostat ... 30—p. 4
USDA Reports on Tests With Coccidiostats ... 30—p. 6

**COMPANIES:**
Abbott Laboratories, Inc. (Sales report) ... 9—p. 58
Albers Milling Co. (Flood shuts down mill) ... 2—p. 1
Albers Milling Co. (Mill in Oregon) ... 23—p. 7
Allied Mills, Inc. (Calf birth report) ... 9—p. 88
Allied Mills, Inc. (To move offices) ... 23—p. 4
Allied Mills, Inc. (Sales report) ... 30—p. 1
Amber Milling Co. (Bought by Moorman Mfg. Co.) ... 30—p. 1
American Cyanamid Co. (Deny FTC complaint) ... 9—p. 7
American Cyanamid Co. (Thimet research) ... 9—p. 15
American Cyanamid Co. (Antibiotic study) ... 9—p. 54
American Cyanamid Co. (Prizes for exhibitors) ... 16—p. 4
American Cyanamid Co. (New coccidiostat) ... 30—p. 1
American Feed Co. (Bought by Purina) ... 9—p. 4
American Scientific Laboratories, Inc. (Vaccine) ... 16—p. 52
Arnold Elevator Mills (Burns) ... 9—p. 4
Arnold Elevator Mills (Plans to rebuild) ... 16—p. 95
Aubrey Feed Mills (Egg study) ... 16—p. 92
Babcock Poultry Farm (Franchise school) ... 16—p. 62
Beacon Milling Co. (New handbook) ... 23—p. 30
Bemis Bro. Bag Co. (Chenault dies) ... 9—p. 88
Benedict Seeds, Inc. (New mill at Lewiston, Idaho) ... 2—p. 84
Borden Co. (New fortification product) ... 2—p. 8
Borden Co. (Sales report) ... 9—p. 76
Cameron Feed Mills (New mill) ... 9—p. 7
Cargill, Inc. (Copra unloading) ... 9—p. 16
Centennial Mills, Inc. (Elevator sold) ... 2—p. 51
Central Soya Co. (Acquires Glidden Chemurgy Division) ... 2—p. 4
Central Soya Co. (Dividend) ... 9—p. 56
Cereal By-Products Co. (Officers) ... 9—p. 6
Colorado Milling & Elevator Co. (Swine plan) ... 16—p. 1
Commercial Solvents Corp. (Net earnings) ... 2—p. 79
Commercial Solvents Corp. (Patent infringement suit) ... 23—p. 6
Cooperative G.L.F. Exchange (Pellet program) ... 9—p. 56
Cooper, O. A., Co. (Elevator destroyed) ... 23—p. 8
Coos-Curry Farmers Cooperative (Merger) ... 9—p. 42
Corn Products Refining Co. (Merge with Best Foods) ... 2—p. 75
Cutter Milling Co. (Dairy feed formulas) ... 16—p. 40
Daycom, Inc. (Sells portable drier) ... 9—p. 27
DeYoung, Lowell Feed Mill (New mill) ... 2—p. 4
Dorsey Trailers, Inc. (Distributors) ... 16—p. 61
Doughboy Industries (Broiler projects) ... 9—p. 62
Dow Chemical Co. (Earnings) ... 23—p. 74
Du Pont Co. (Reduces price of "Hydan") ... 16—p. 6
Du Pont Co. (Terephthalic acid) ... 23—p. 8
E. Z. Gas Corp. (Pine Manor Feeds merger) ... 9—p. 79
Edwall Grain Growers (Buys Centennial Mills elevator) ... 2—p. 51
Eshelman, John W., & Sons (Automatic mixing unit) ... 30—p. 26
Ewing, Ray, Co. (New growth stimulant) ... 30—p. 10
Farmers Exchange (New mill) ... 2—p. 74
Feed Rite Mills, Ltd. (To build mill) ... 2—p. 27
Gaddis, Ed (To build hatchery) ... 23—p. 72
Geerlings Feed Mills (Sales meeting) ... 16—p. 16
General Mills, Inc. (Sales report) ... 2—p. 6
General Mills, Inc. (Expansion plans) ... 30—p. 24
Glidden Co. (Central Soya buys Chemurgy Division) ... 2—p. 4
Gooch Feed Co. (Sponsors livestock "sale") ... 16—p. 95
Grain Processing Corp. (Wet milling) ... 9—p. 58
Hales & Hunter Co. (Strike ends) ... 9—p. 7
Haynie Menhaden Products, Inc. (Refrigerated ship) ... 23—p. 83
Hilltop Laboratories (Disease instruction) ... 16—p. 7
Hooker Chemical Co. (Phosphorus division) ... 16—p. 100
Honeggers' & Co., Inc. (Report) ... 23—p. 1
Hubbard Milling Co. (Cedar Rapids addition) ... 16—p. 7
Hubbard Milling Co. (New promotion) ... 30—p. 6
Hunting Elevator (New mill) ... 2—p. 51
International Minerals & Chemical Corp. (Research head) ... 2—p. 7
Kem Milling Co. (Push-button plant) ... 9—p. 50
Kellogg, Spencer, & Sons, Inc. (Land sold) ... 2—p. 53
Lindsey-Robinson & Co., Inc. (Egg plant) ... 2—p. 1
Lindsey-Robinson & Co., Inc. (Egg program) ... 16—p. 46
Lucas Products Co. (Expansion) ... 2—p. 8
Maritime Milling Co. (Modernization plan) ... 16—p. 7
Mathieson, Olin, Chemical Corp. (New company for urea) ... 9—p. 78
Merck & Co., Inc. (Veterinary catalog) ... 9—p. 81
Merck & Co., Inc. ("HepZide" use, cost) ... 16—p. 8
Midland Cooperatives, Inc. (Mill) ... 16—p. 90
Monarch Feed Mills (Open house) ... 23—p. 4
Moorman Manufacturing Co. (4-H swine program) ... 9—p. 14
Moorman Manufacturing Co. (West Coast mill) ... 30—p. 1
National Alfalfa Dehydrating & Milling Co. (Hay pellets) ... 2—p. 1
National Alfalfa Dehydrating & Milling Co. (Sales report) ... 9—p. 83
National Distillers & Chemical Corp. (Earnings) ... 9—p. 77
National Vitamin Products Co. (Sales meeting) ... 16—p. 95
Neely, F. S., Co. (New mill) ... 23—p. 72
Nutrena Mills, Inc. (Trademark suit) ... 2—p. 8
Nutrena Mills, Inc. (Sales report) ... 16—p. 1
Oregon Egg Producers (Merger) ... 9—p. 42
Overly & Withers (Brokerage firm) ... 9—p. 87
Peavey Feed Mills (Sales meeting) ... 30—p. 36
Pet Food Plant Co. (Improved dog food) ... 9—p. 14
Pfizer, Chas., & Co., Inc. (Antibiotic effectiveness) ... 2—p. 1
Pfizer, Chas., & Co., Inc. (Deny FTC complaint) ... 9—p. 7
Pfizer, Chas., & Co., Inc. (Egg promotion) ... 9—p. 10
Pfizer, Chas., & Co., Inc. (New tranquilizer) ... 23—p. 1
Pillsbury Mills (Centerville, Iowa, modernization ... 9—p. 28
Pillsbury Mills (Issues common stock) ... 9—p. 70
Pine Manor Feeds, Inc. (Merger) ... 9—p. 79
Ralston Purina Co. (Sales record) ... 9—p. 1
Ralston Purina Co. (Buys Cuban mill) ... 9—p. 4
Ralston Purina Co. (New Memphis mill) ... 9—p. 6
Ranger Equipment Co. (Swine plan) ... 2—p. 6
Rubinoff, Jacob, Feed Co. (Mineral symposium) ... 16—p. 86
Shawnee Milling Co. (Markets antibiotics dairy feed) ... 16—p. 93
Sherwood Feed Mills (Sun-Ray license) ... 9—p. 76
Southern States Cooperative (Tonnage) ... 9—p. 1
Spencer Chemical Co. (Polyethylene bag) ... 2—p. 79
Sprout, Waldron & Co., Inc. (Installs new system) ... 2—p. 76
Sprout, Waldron & Co. (Feed mill to Spain) ... 23—p. 24
Sterwin Chemical, Inc. (Coccidiosis symposium) ... 16—p. 64
Sun Oil Co. (Urea production) ... 9—p. 78
Texas Farm Products Co. ("Pig Factory" plan) ... 23—p. 11
Tillamook County Creamery Assn. (New feed facility) ... 16—p. 36
U. S. Industrial Chemicals Co. (California Morea plant) ... 16—p. 8
Universal Mills (Sales manager) ... 2—p. 6
Walnut Grove Products Co., Inc. (New plant) ... 2—p. 1
Webster, H. K., Co. (Bag handling) ... 16—p. 94
West, J. S., Milling Co. (New plant) ... 16—p. 36

**CONFERENCES:**
All-Industry Poultry Day ... 9—p. 11
American Poultry Congress and Exposition ... 2—p. 10
American Society of Animal Production ... 16—p. 56, 23—p. 28
Egg Production Meeting ... 9—p. 52
Kentucky Feed Conference ... 30—p. 10
Michigan Swine Day ... 23—p. 7
Poultry Conference ... 9—p. 42
Poultry Science Assn. ... 9—p. 1, 23—p. 10, 30—p. 8
Purdue Swine Day ... 23—p. 8
Soybean Utilization Conference ... 9—p. 76
Swine Study Day ... 23—p. 82
Wisconsin Nutrition Conference ... 23—p. 6, 30—p. 7

**CONSTRUCTION:**
Benedict Seeds, Inc. (Lewiston, Idaho) ... 2—p. 84
Cameron Feed Mills (North Little Rock, Ark.) ... 9—p. 7
DeYoung, Lowell, Feed Mills (Woodinville, Wash.) ... 2—p. 4
Farmers Exchange (Cashion, Okla.) ... 2—p. 74
Gaddis, Ed (Forest, Miss.) ... 23—p. 72

Gibson Mill Co. (Belen, N.M.) ... 16—p. 41
Monarch Feed Mills (Dexter, Mo.) ... 23—p. 4
Neely, F. S., Co. (Ft. Smith, Ark.) ... 23—p. 72
Peoples Supply, Inc. (Charles Town, W. Va.) ... 2—p. 14
Ralston Purina (Memphis, Tenn.) ... 9—p. 6
Rite Mills, Ltd. (Brandon, Manitoba) ... 2—p. 27
Tillamook (Ore.) County Creamery Assn. ... 16—p. 36
U. S. Industrial Chemical Co. (Anaheim, Cal.) ... 16—p. 8
Walnut Grove Products, Inc. (Atlantic, Iowa) ... 2—p. 1

**CONSUMPTION & PRODUCTION:**
Alabama Feed Sales ... 16—p. 70
Arizona Reports Feed Tonnage ... 16—p. 91
Pennsylvania Reports Tonnage ... 23—p. 10
Six-Month Feed Tonnage Hits New High ... 9—p. 1
Tonnage Up 14% in North Carolina ... 9—p. 8
Wisconsin Formula Feed Usage ... 23—p. 4

**CORN:**
Purdue Swine Day ... 23—p. 8
World Corn Output ... 2—p. 60

**CORN FERMENTATION SOLUBLES:**
Maryland Broiler Trial ... 9—p. 36

**COTTONSEED MEAL:**
Cottonseed Supply Cut Not Likely ... 9—p. 1

**DAIRY FEEDING:**
Dairy Calf Nutrition Research ... 2—p. 61
Feeding Concentrates at Record Rate ... 16—p. 7
Feed Conference at Kentucky ... 30—p. 10

**DEHYDRATED ALFALFA:**
Curtailed Dehy Output ... 30—p. 6
Pigmentation Studies ... 16—p. 26
Production and Price ... 30—p. 73
Report on Dehy Industry ... 16—p. 8

**DEHYDRATED GRASSES:**
Find New Sources of Vitamin A ... 30—p. 4

**DISASTERS:**
Arnold Elevator Mills (Butler, Mo.) ... 9—p. 4
Cooper, O. A., Co. (Humboldt, Neb.) ... 23—p. 8

**DISEASES:**
Newcastle Vaccine Developed by USDA ... 23—p. 87
Hog Cholera Hits Missouri, Virginia ... 2—p. 51
Antibiotiics for Bloat Prevention ... 23—p. 52
New Cholera-Like Disease ... 23—p. 22
Soybean, Lard Oil Found Effective as Bloat Preventive ... 16—p. 93

**DUCKS:**
Nebraska Tests Ducks Bred for Egg Production ... 23—p. 16

**EDUCATION:**
AFMA to Promote Industry Careers ... 2—p. 16
Alabama Scholarship Winner Announced ... 16—p. 8
Michigan State Revises Courses ... 2—p. 62

**EMPLOYEE RELATIONS:**
North Carolina Association ... 16—p. 1

**ENZYMES:**
Enzymes in Poultry Rations Containing Barley ... 23—p. 66
Wisconsin Meeting ... 23—p. 6

**FATS:**
Dietary Fat and Blood Clotting in Chicks ... 2—p. 64

**FEATHER MEAL:**
Maryland Broiler Trial ... 9—p. 36

**FEED INDUSTRY:**
Annual Feed Output by 1975 Estimated at 70 Million Tons ... 30—p. 1
North Carolina Association ... 16—p. 1

**FEED FORMULATION:**
Feed Conference at Kentucky ... 30—p. 11
Putting Today's Research Into Feeds ... 23—p. 18

**FEED SUPPLIES:**
Record Feed Grain Tonnage ... 16—p. 4
Record Feed Supply Sighted ... 2—p. 8

**FEEDLOT OPERATIONS:**
Good Management Helps Large Feedlot ... 16—p. 88

**FISH MEAL:**
Bulk Storage of Fish Meal ... 9—p. 78
Maryland Broiler Trial ... 9—p. 36

**FREIGHT RATES:**
Asks ICC to Decline Tariff Suspension ... 30—p. 4
Cuts Sought in Pacific Northwest ... 23—p. 56
Plans Cuts in Rates for Corn ... 16—p. 61
Railroad Announces 50% Reduction ... 23—p. 56
Rates Reduced for Midwest Grains ... 30—p. 4
Reduction in Grain Freight Rate Asked ... 2—p. 77

**GRAIN SORGHUMS:**
Milo in Broiler Feeds ... 2—p. 69

**HEXESTROL:**
Boosts Gain of Wintering Steers ... 23—p. 80

**HORMONES:**
Both Antibiotic and Hormone Implants ... 16—p. 87
New York City Considers Action on Hormones in Meat ... 2—p. 7

**INSECTICIDES:**
USDA Endorses New Bayer 21/199 ... 2—p. 53
Urges Timely Treating to Eliminate Grubs ... 16—p. 60

**INTEGRATION & CONTRACT FARMING:**
Annual Poultry Congress ... 2—p. 10
Feed Company's Egg Program ... 16—p. 46
Illinois Poultrymen Discuss Integration ... 9—p. 11
Increase in Contract Farming Predicted ... 9—p. 81
Integration May Be Just a Fad ... 9—p. 1
Michigan Swine Day ... 23—p. 7
North Carolina Meeting ... 16—p. 1
USDA Report on Integration ... 9—p. 1
Wisconsin Meeting ... 23—p. 6

**IRON:**
Iron Injections Boost Pigs' Weight ... 23—p. 10

**LABOR RELATIONS:**
Agreement Reached on Contract ... 9—p. 7
Buffalo Labor Negotiations ... 16—p. 4

**LEGISLATION:**
Changes in Grain Price Structures Seen ... 16—p. 1
Market Effect of Farm Bill ... 23—p. 1
New FDA Bill ... 30—p. 1

**LIQUID FEED:**
Kansas Researchers Report on Liquid Supplement ... 23—p. 64
Liquid Feed Progress Report Given ... 30—p. 24

**LITERATURE:**
Beacon Announces Poultry Handbook ... 23—p. 30
Feeding Booklet Issued ... 30—p. 27
New Bulletin Deals With Feeds, Feeding ... 16—p. 44
Report on Dehy Industry ... 16—p. 8

**LIVESTOCK INDUSTRY:**
Beef Imports Discussed ... 16—p. 98
National Swine Test Reporting Program ... 9—p. 54
Need for Increase in Livestock Production ... 9—p. 10

**LIVESTOCK NUMBERS:**
1958 Lamb Crop Up 4%; Totals 20,779,000 Head ... 2—p. 52
Numbers of Meat Animals Increasing ... 30—p. 1
Total Calf Crop Expected to Drop Again in 1958 ... 9—p. 70

**MANAGEMENT—LIVESTOCK & POULTRY:**
Feeder Spacing Helps Broiler Chick Gains ... 16—p. 41
Holstein Steers Fed for Beef ... 30—p. 73
Maryland Expert Discusses Environment Effect ... 9—p. 79
Pigs Gain Faster in Confinement ... 30—p. 71
Ranch-Way Swine Production Plan ... 16—p. 1
Surveys Feeds, Feeding Methods ... 23—p. 14
Swine Producers Offered Automatic Plan ... 2—p. 6
Texas Firm Offers "Pig Factory" Plan ... 23—p. 11

**MEAT & BONE SCRAPS:**
Maryland Broiler Trial ... 9—p. 36

**MERCHANDISING:**
Customer Service Wins Volume ... 30—p. 32
Dealer Fattens Farmers' Pocketbooks ... 2—p. 46
Farm Supply Store Valuable Addition ... 2—p. 66
Feed Store on Wheels ... 16—p. 83
Grain Bank Plan Helps Boost Trade ... 16—p. 85
Mill Outgrows Expanded Plant ... 23—p. 42

**MINERALS:**
Wisconsin Conference ... 30—p. 7

**MOLASSES:**
Cuban Export Molasses 65% Shipped ... 2—p. 4
U.S. Molasses Imports Up Sharply ... 30—p. 66

**OATS:**
Oat Forage, Grain Feed Value Compared ... 16—p. 76

**PACKAGING:**
Development of Polyethylene Bag ... 2—p. 79

**PELLETING:**
California Reports Roughage Pellet Trials ... 16—p. 44
Coastal Bermuda Pelleting Studied ... 30—p. 31
Dairy Specialist Sees Cheaper Rations ... 16—p. 69
Feeding High Salt Pellets ... 23—p. 85
Michigan Swine Day ... 23—p. 7
Purdue Swine Day ... 23—p. 8
To Produce Alfalfa Hay Pellets ... 2—p. 1

**PIGMENTATION:**
Pigmentation Studies With Broilers and Laying Hens ... 16—p. 26

**POULTRY BY-PRODUCTS MEAL:**
Maryland Broiler Trial ... 9—p. 36

**POULTRY FEEDING:**
Controlled Feeding of Replacements ... 9—p. 22
Feed Conference at Kentucky ... 30—p. 10
Lighting, Feeding Discussed ... 9—p. 52
Poultry Feeding Research Outlined ... 9—p. 42

**POULTRY INDUSTRY:**
Broiler Council Outlines Promotions ... 23—p. 40
Broilers Futures Market ... 9—p. 16
Dealer-Grower Arrangements Revised ... 2—p. 8
Feed Company's Egg Program ... 16—p. 46
Flocks Get Bigger and Bigger ... 30—p. 73
Kentucky Egg Grading, Candling Law ... 9—p. 7
Marketing of Older Breeders Recommended ... 16—p. 98
Midwest Firm Announces Broiler Projects ... 9—p. 62
Mississippi's Broiler Industry ... 16—p. 80
Producers Develop Own Egg Plan ... 2—p. 36
Virginia PEP Program ... 23—p. 8

**POULTRY NUMBERS:**
Chicks for Supply Up 82% ... 23—p. 6
Egg-Type Chick Hatch Up 13% ... 23—p. 1
4% Reduction in 1958 Turkey Crop ... 30—p. 1
Replacement Birds Climb 10%; 5% Larger Flocks Expected ... 2—p. 4

**PRICES:**
Broiler Prices Hit Year's Low Point ... 30—p. 6
Buffalo Millfeeds Up After 16-Year Low ... 30—p. 4
Bulk Midds. Fall $17.50 From July ... 9—p. 8
Changes in Grain Price Structure Seen ... 16—p. 1
Farm Commodity-Feed Price Ratios (chart) ... 9—p. 78
Hog, Broiler Price Patterns Compared ... 23—p. 80
Hog Price Problem Seen for Late '59 ... 9—p. 7
Market Effect of Farm Bill Examined ... 23—p. 1
Predicts Continued Declines in Cattle ... 2—p. 8
Says Egg Prices Might Drop ... 23—p. 87
Steady to Slightly Lower Prices Seen ... 9—p. 70

**PRICE SUPPORTS:**
School Lunch Turkeys Bought ... 16—p. 6

**PRODUCTION & MILL OPERATIONS:**
Grain Bank Plan Helps Boost Trade for Eastern Firm ... 16—p. 85
Iowa Mill Outgrows Expanded Plant ... 23—p. 42
New Equipment Helps Boost Volume ... 9—p. 72
New Eshelman Plant ... 30—p. 26
Pillsbury Modernizes Mill ... 9—p. 28
Planning a Commercial Feed Plant ... 2—p. 28
Pre-Cast Concrete Used ... 16—p. 90
Webster Improves Bag Handling ... 16—p. 94
West Co. Operating New Plant ... 16—p. 36

**QUALITY CONTROL:**
Quality Control Discussed ... 30—p. 7

**REGULATORY:**
Considers Action on Hormones in Meat ... 2—p. 7
FDA Fees on Medicated Feed Applications ... 2—p. 6
Firmer Additives Control Seen in New FDA Bill ... 30—p. 1
High-Fiber Feed Gets Approval ... 23—p. 1

**SALT:**
High-Salt Pellets ... 23—p. 85

**SELENIUM:**
Selenium Found Effective for "White Muscle" ... 16—p. 78

**SHEEP FEEDING:**
Effects of Supplements and Methods ... 9—p. 18
How Feeding Influences Reproduction ... 16—p. 10

**SOYBEAN MEAL:**
Annual Feed Output by 1975 Estimated at 70 Million Tons ... 30—p. 1

**STILBESTROL:**
Hormone Implants, Oral Doses Tested ... 30—p. 31
Montana Researchers Test Additives ... 30—p. 36

**SWINE FEEDING:**
Feed Conference at Kentucky ... 30—p. 10
Feeding Hogs Tomorrow ... 30—p. 38
Gestation Supplements ... 30—p. 31
How Feeding Influences Reproduction ... 16—p. 10
Michigan Swine Day ... 23—p. 7
Protein Doesn't Affect Hog Carcass Quality ... 16—p. 87
Purdue Swine Day ... 23—p. 8
Surveys Farmers on Feeding Methods ... 23—p. 14
Swine Feeding Work Outlined ... 23—p. 82

**TEREPHTHALIC ACID:**
Terephthalic Acid for Feed Not Yet Approved ... 23—p. 8

**TRANQUILIZERS:**
Additives in a Lamb Fattening Ration ... 16—p. 18
Kentucky Reports Tranquilizer Test ... 16—p. 40
New Tranquilizer Now Available ... 23—p. 1
Purdue Swine Day ... 23—p. 8
Sees Bright Future in Tranquilizer Use ... 16—p. 40

**TURKEY FEEDING:**
Four Turkey Feeding Systems Compared ... 30—p. 73

**TURKEY HEMORRHAGE:**
Research Finding Made in Turkey Hemorrhage Study ... 23—p. 4

**VETERINARIAN RELATIONS:**
North Carolina Association ... 16—p. 1

**VITAMINS:**
Dietary Fat and Blood Clotting in Chicks ... 2—p. 64
Effect of Vitamin A Supplement ... 30—p. 18

**ZINC:**
Maryland Broiler Trial ... 9—p. 36



WISCONSIN ALUMNI RESEARCH FOUNDATION

**LABORATORY SERVICES**

PRACTICAL CHICK FEEDING STUDIES IN BATTERIES OR ON LITTER

DETERMINATIONS OF:

●VITAMIN $B_{12}$ ●ANTIBIOTICS ●ARSENICALS

A.O.A.C. vitamin $D_3$ chick assays
U.S.P. vitamin D rat assays — results in 8 days
U.S.P. or A.O.A.C. vitamin A assays
Other vitamin assays
Amino acid assays
Biological protein evaluations
Proximate analyses and mineral determinations
Insecticide Testing and Screening
*Other biological, chemical and microbiological services*

PROJECT RESEARCH AND CONSULTATION

*Write for price schedule*

**WISCONSIN ALUMNI RESEARCH FOUNDATION**
P.O. Box 2059-N ● Madison 1, Wis.

**CONSULTANTS**
TO THE
**FEED INDUSTRY**
**C. W. SIEVERT and ASSOCIATES**
Room 1339
221 N. LaSalle St. Chicago 1, Ill.

**Myvamix®**
**VITAMIN E**
**FEED SUPPLEMENT**
**IS DISTRIBUTED BY:**

THE AMBURGO COMPANY, INCORPORATED
1315-17 Walnut Street
Philadelphia 7, Pennsylvania

CARROLL SWANSON SALES COMPANY
618 Des Moines Building
Des Moines 9, Iowa

FEED PRODUCTS, INC.
1370 11th Street
Denver, Colorado

W. M. GILLIES, INC.
244 California Street
San Francisco 11, California

GOOD-LIFE CHEMICALS, INC.
310 South First Street
Effingham, Illinois

HOLT PRODUCTS COMPANY
Box 840
Milwaukee 1, Wisconsin

KINDSTROM-SCHMOLL COMPANY
418 Flour Exchange
Minneapolis 15, Minnesota

M. A. McCLELLAND COMPANY
Dwight Building
Kansas City 5, Missouri

PLESS AND SHEAHAN
P.O. Box 2654
Memphis 2, Tennessee

THE JOHN F. YOUNG COMPANY
3270 Southside Avenue
Cincinnati 4, Ohio

*IN CANADA*

CHARLES ALBERT SMITH, LIMITED
356 Eastern Avenue
Toronto, Ontario

8307 Royden Road
Montreal, P. Q.

And, of course, you can get it directly from *Distillation Products Industries*, Rochester 3, N. Y. Sales offices: New York and Chicago.

*producers of*
***Myvamix***
*Vitamin E*

**Distillation Products Industries**
*is a division of*
**Eastman Kodak Company**

LAB PROTECTION
FOR YOUR
FEED QUALITY

FEEDS "Laboratory Controlled"
AT REMARKABLY LOW COST

Fully equipped for tests of new feed additives as well as protein, fat, fiber, etc.

QUICK SERVICE ON VITAMIN ASSAYS — CHECKS ON FEED ADDITIVES — FUMIGANT RESIDUES
REFEREE LABORATORY

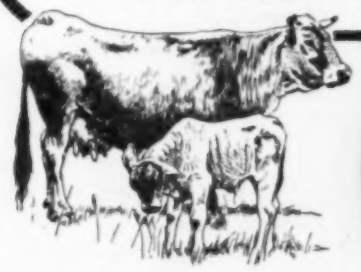
Doty LABORATORIES
Cereal Technologists

1435 Clay St. • NO. KANSAS CITY 16, MO. • Tel. GRand 1-8580

VISIT OUR NEW MODERN LABORATORY • 7000 SQ. FT. WORK SPACE

Gilbert Jackson COMPANY, INCORPORATED
BOARD OF TRADE BLDG., KANSAS CITY 5, MO.
EARL GARRATT—BOB KIVETT, ASSOCIATES
Phone BA 1-0337
TWX KC-252
All Feed Ingredients
A Nationwide Service from the Heart of America

Use
RUFIS®
SUPER BIO CONCENTRATE



Increase MILK PRODUCTION up to 20%

Get increased conversion on Beef Cattle on regular feeds and be able to feed more roughage for better gains and lower cost!

RUFIS SUPER BIO CONCENTRATE CONTAINS ALL NATURAL RUMEN BACTERIA, ENZYMES AND B VITAMINS. IT CONTAINS NO CULTURES OR SYNTHETICS.

RUFIS SUPER BIO CONCENTRATE CAN BE PELLETED. IT DOES NOT HAVE TO BE DUSTED ON THE PELLETS.

Each shipment of RUFIS Super Bio Concentrate is biologically tested in a laboratory to assure you it contains no pathogenes or harmful bacteria. There is only one RUFIS Super Bio Concentrate. It is protected by Patent No. 2,560,830.

OFFICES IN:
CHICAGO
3100 So. California Ave.
Chicago 8, Illinois
CINCINNATI
2933 Spring Grove Ave.
Cincinnati 25, Ohio
DENVER
1211 West 44th Street
Denver 11, Colorado
LOUISVILLE
4007 Crittenden Drive
Louisville 9, Kentucky
MILWAUKEE
1100 So. Barclay Street
Milwaukee 4, Wisconsin
MINNEAPOLIS
111—22nd Avenue, N.E.
Minneapolis 18, Minn.
NEW YORK
60 East 42nd Street
New York 17, New York
SOUTH NORWALK
55 Day Street
South Norwalk, Conn.

FREE BROCHURE! Write TODAY! No cost or obligation!

MERCHANTS CHEMICAL CO., INC.
605 Leavenworth St., Omaha, Nebr.

Name_____Title_____
Firm Name_____
Address_____
City_____State_____

NITROFURANS REPORT—The first copy of "Proceedings of the Second National Symposium on Nitrofurans in Agriculture" was presented to Dr. C. C. Murray (right), dean of the College of Agriculture, University of Georgia, by William M. Lunceford, southeastern district manager of Hess & Clark, Inc. Dr. Murray was general chairman of the symposium which was held on the Georgia campus earlier this year. The 149-page, spiral-bound book contains over 30 papers presented at the symposium describing research on the effects of the nitrofuran drugs on numerous diseases of poultry and livestock. Copies are available from Hess & Clark, Inc., Ashland, Ohio.

## *Advantages of Buying Started Pullets Noted By Poultry Researcher*

DURHAM, N.H.—The practice of buying started pullets for replacement stock may prove to be an advantage to egg producers who can not rear replacements under an "all in, all out" system, according to a report from the University of New Hampshire.

Russell Moyer, research technician at New Hampshire, reported in a recent issue of Combings, the New Hampshire Experiment Station publication, that the practice may prove advantageous if it is used correctly.

The started pullets should be purchased from a poultryman who uses the "all in, all out" system, he said. This system allows brooding with a period of time between broods to permit cleaning out and allowing the house to stand empty.

He pointed out that selling started pullets was once an active part of the poultry industry but that it declined in importance. The reason for the decline, he said, was that continuous brooding was practiced, and the constant exposure to disease by passing it from one brood to another, resulted in some unhealthy birds.

"Today, many poultrymen are making the same error of brooding their replacement stock in a continuous operation in an effort to use their brooding equipment more efficiently," Mr. Moyer said. "Consequently, the same disease problems may exist just as under the old system."

He said broiler growers have found the "all in, all out" system gives best results and that it would seem that the procedure should be applicable to growing pullets for the best results.

"The egg producer should be extremely cautious in choosing a pullet grower from whom he will obtain his replacement stock," Mr. Moyer said. "By transferring stock from one kind of farm condition to another, the egg producer takes a great deal of risk in exposing other stock to diseases unless the incoming stock has been reared on very high standards of sanitation. There is also the chance of infecting the new stock from other stock on the farm."

These problems could be eliminated in the case where an egg producer would not need a steady supply of eggs and the "all in, all out" system could be used for laying birds, he said.

There may also be problems if the egg producer obtains stock not grown under a vaccination program suitable for his farm. Mr. Moyer suggested that it would be to the egg producer's advantage to inspect the birds throughout the growing period to be sure they are reared under conditions that satisfy him.

"This system of growing pullets lends itself best to contract arrangements," Mr. Moyer said. "Contracts may be made between a pullet grower and various egg producers which could specify the strains to be grown and certain management practices as well as the date of delivery. This would require that a pullet grower may grow birds for various egg producers under similar conditions at the same time and that an egg producer must find a pullet grower who can produce his pullets under conditions that would be satisfactory for transferring stock to his farm."

## Hawaiian Molasses Shipments Decrease

WASHINGTON—Hawaiian cane blackstrap molasses production during August, 1958, amounted to 7,381,044 gal., compared with 10,066,599 in July and 5,762,235 gal. in August, 1957, the U.S. Department of Agriculture reports.

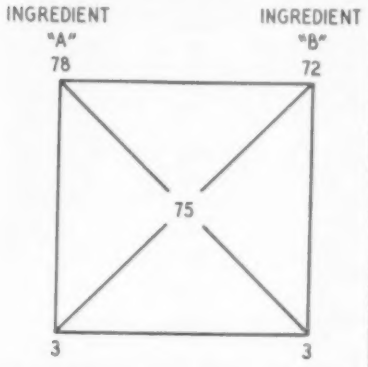
Shipments of Hawaiian cane blackstrap molasses to the U.S. mainland in August amounted to 4,103,145 gal. as against 6,444,477 in July and 4,342,872 in August last year.

The USDA also reported that sugar beet harvest is under way in the Midwest, but will not begin until late September or early October in the Rocky Mountain states. Trade reports anticipate good yields in the Rocky Mountain states, but poor yields in California.

## PROGRAMMING

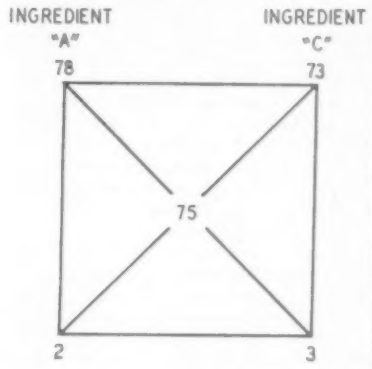
(Continued from page 28)

Pearson square method for combination of "A" and "B" we have:




Our second solution can be read from the "square" as 3 parts "A" and 3 parts "B". Or, we can easily translate this into 50% "A" and 50% "B".

For the combination "A" with "C" the "square" is:




This reads, 2 parts "A" and 3 parts "B". Or, again in percentage terms, 40% "A" and 60% "B".

These are all the feasible solutions to the TDN specification using these ingredients. To summarize, they are:

Solution No. 1—100% "A"
Solution No. 2— 50% "A" and 50% "B"
Solution No. 3— 40% "A" and 60% "C"

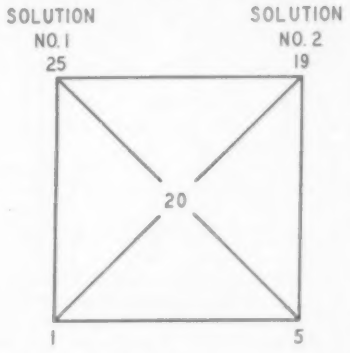
We are ready now to consider the second specification, that for protein.

As a first step we determine the protein level in solutions 1, 2 and 3 to the first (TDN) specification. Solution No. 1 (i.e. 100% of "A") contains 25% protein; thus, it clearly satisfies the protein specification. Solution 1 can be listed as a solution to both specifications.

Solution No. 2 (i.e. 50% "A" and 50% "B") has 19% protein; just 1% under the specified level. Thus, it is not a solution to both specifications. It is eliminated from consideration as a solution to the mix problem, but will be useful to us in another way.

Solution No. 3 (i.e. 40% "A" and 60% "B") has only 16% protein so it can be eliminated as a solution to both specifications, but it, too, will be of some further interest. We are left, at this point, with only one satisfactory solution to our problem—that of 100% ingredient "A". However, we have not exhausted all possibilities.

We combined ingredients that were below the TDN specification with the ingredient that was above to form solutions involving two ingredients. We are just as free to combine solutions to the first specification that are below the second specification with those (only one in the illustration) that are above specification on the second characteristic to form solutions to the two specifications. This sounds complicated; but, consider the following Pearson square:

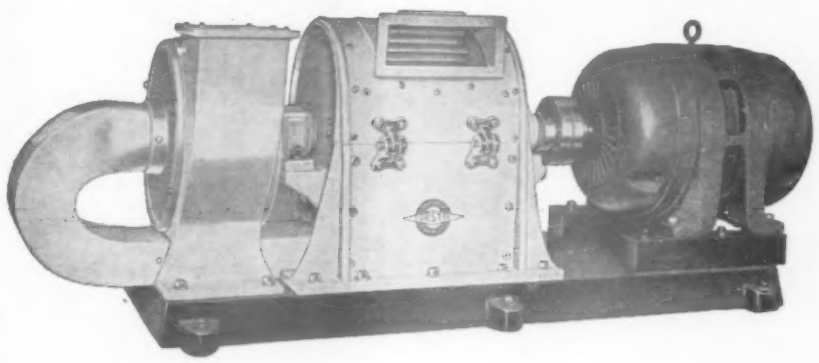



This tells the story very simply. If we combine one unit of solution

EXPELLER

**SOYBEAN OIL MEAL**
AND **PEASIZE CAKE**
43% PROTEIN — 4% FAT
The High - Fat, High - Protein, High - Energy Basic Ingredient for All Feeds and
**DOG FOOD RATIONS**
PREFERRED by Feed Manufacturers from Coast to Coast
AVAILABLE in carloads and trucklots throughout the year from our centrally located plant
**ILLINOIS SOY PRODUCTS COMPANY**
SOYBEAN PROCESSORS
P. O. Box 53 SPRINGFIELD, ILLINOIS Phone 23391

**FORSTER HAMMER MILLS**
Serve Better . . . Last Longer!

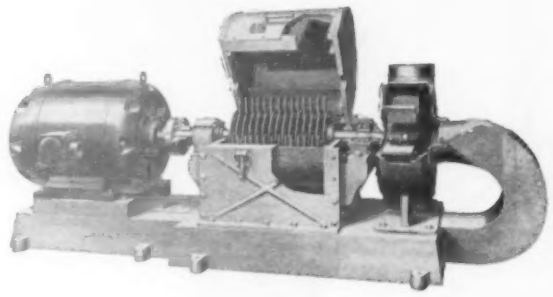


*The Aristocrat of the Milling Industry*

☆Heavy construction ☆Continuous service ☆Carburized hammers
☆Extra-large main shaft of alloy ☆Shock-proofed steel
☆Vibrationless performance ☆Cast alloy steel fan

**Proved by thousands of installations**

Want quality? dependability? low maintenance? Specify a Forster Hammer Mill for your needs. Here's the mill that's proved itself all over the world. Forster Hammer Mills have the precision engineering of a fine watch, with every part machined to give a smooth, vibrationless performance. Forster Mills have the stamina to take the roughest punishment. . . . through the years. A true balance of air, screen surface and power to insure lasting efficiency. There's a Forster Hammer Mill that's just the right size to most efficiently serve you. Call or write for information, now.



● Sizes from 15 to 125 H. P.

Send for complete details, today

FORSTER MANUFACTURING COMPANY
ADA, OKLA FEderal 2-6020

FORSTER MANUFACTURING CO., ADA, OKLA.
Gentlemen:
Please send complete details on Hammer Mills
Name .....
Company Name .....
Address .....
City ..... State .....

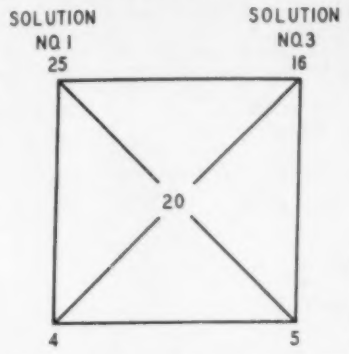
*Buy and Sell*
through
**WANT ADS**
—in—
**FEEDSTUFFS**

No. 1 with five units of solution No. 2, we will obtain a mix that exactly meets our protein specification. Moreover, since each of the solutions No. 1 and No. 2 meet the TDN specification, then any combination of them will also meet the TDN specification. Therefore, the solution developed by combining No. 1 and No. 2 will meet both specifications.

In the case of combinations of solutions, it's a bit more difficult to see exactly the proportions of the ingredients that make up the mix.

In the above case, we would have 16⅔% of the combination consisting of solution No. 1 which is itself 100% "A"; thus, the combination by solution No. 1. The remaining 83⅓% of the mix consists of solution No. 2 which, in turn, is 50% "A" and 50% "B". So the combination receives 41⅔% of "A" from solution No. 2. The remaining 41⅔% is, of course, ingredient "B" or, summing up for this combination (which we shall call solution No. 4) it contains 58⅓% of "A" and 41⅔% "B".

Another combination of solutions is relevant. It is solution No. 1 and No. 3. The "square" solution for the combination is as follows:




Thus, 4 parts of solution No. 1 and 5 parts of No. 3 form another solution which we shall call solution No. 5. Sparing you the arithmetic of extension, it consists of 66⅔% "A" and 33⅓% "C".

This exhausts the procedure for developing solutions. We have only three relevant solutions to our problem. These are:

Solution No. 1—100% "A"
Solution No. 4— 58⅓% "A" and 41⅔% "B"
Solution No. 5— 66⅔% "A" and 33⅓% "C"

To complete the linear programming analysis, we have only to extend these three formulas on cost and select the lowest in cost. By this solution method, you compute all the relevant solutions "once-and-for-all." Thereafter, you merely extend on cost.

Perhaps, you can appreciate how the number of solutions will increase rapidly as the number of specifications and number of ingredients are increased. At some point, before the usual miller's problem is solved, the situation gets out of hand. There are more solutions than can be handled. This procedure may have a place in the plans of the very small miller and has definite promise in ration planning at the farm level. We will not pursue these ideas further here.

In the next article we will discuss the logical aspect of the use of the "simplex" method of linear programming in solving your feed mix problems. This is the method, modified in various ways from the original, that is most useful in solving your kind of problem. It is the specific form of the technique most of the computer service salesmen will want to discuss with you.

v v

**REFERENCES AND NOTES**

(The numbers in the parentheses before the reference relates the reference to a relevant point in the text.)

(1) Dantzig's original paper on linear programming appeared in the Cowles Commission Monograph No. 13, Activity Analysis of Production and Allocation, published by John Wiley and Sons, Inc., in 1951. Do not bother to check this unless you understand matrix algebra. It is not a good place to begin your study.

(2) Waugh's article "The Minimum-Cost Dairy Feed" appeared in the Journal of Farm Economics of August, 1951. He supplements the presentation with graphic analysis similar to that used in this article. He also employs matrix algebra but does a good job of making it appear simple. You may want to check this article for background. His methods are now little used, however, in setting up or solving feed-mix problems.

(3) Petersen's cottonseed meal and corn constants are described in text on p. 216 and the actual constants for feeds are given in Appendix table II on p. 1073 of Morrison's Feeds and Feeding (22nd Ed.).

(4) I have been unable to find this original source for the "Pearson square." It is discussed and illustrated, however, in Petersen's Dairy Science (2nd Ed.), pp. 593-594.

(5) The "complete description method" is described in simple terms in Linear Programming and Economic Analysis by Dorfman, R., Samuelson, P. A., and Solow, R. M., published by McGraw-Hill this year. Incidentally, this book also contains an excellent appendix on elementary matrix algebra.

## Peavey Mills Plans Dealer Sales Promotion

MINNEAPOLIS—A complete plan to build a fall and winter bonus of customers and profits for Tone feed distributors has been announced by Peavey Feed Mills, Minneapolis, manufacturer of Tone Feeds.

The plan, based on a continuing study of sales and merchandising opportunities, combines a series of tested elements including dealer service education; feeder production goals; in-store livestock exhibits; production record-keeping and its promotional use; feeder-personalized certified formulas; serving bulk feeders, and effective dealer use of consistent local advertising in connection with regional Tone promotions.

A goal of 20 new feed customers for each participating dealer and 20% more business from each established customer has been set. Several hundred dealers from seven Upper Midwest states have been promised the firm's support to obtain these goals locally.

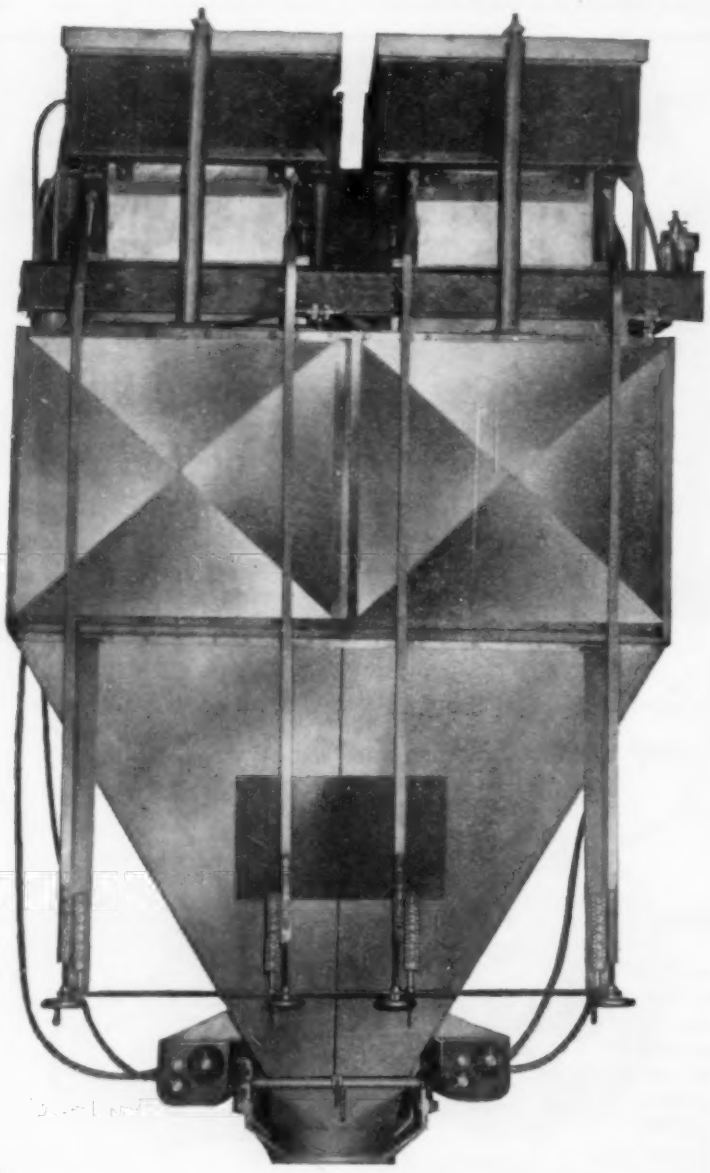
In connection with the "business bonus" goals, the feed firm announced that the top six dealers who exceed their "bonus growth" quotas by the largest percent will be guests of the firm for one-week holiday on an Arizona ranch next January. Enroute to the Arizona holiday, the winners will tour the Carlsbad Caverns in New Mexico.

**ELEVATOR MANAGER**

CONNELL, WASH.—J. D. Stevens, Cunningham, Wash., has assumed duties as manager of the Kahlotus Elevator Co. here, filling the vacancy created by the retirement of J. M. Robbins. Mr. Stevens was formerly manager of the Cunningham Elevator Co. plant for six years.


# 25 to 30 BAGS per min.

**NEW THAYER SCALE for feed mills provides pin-point accuracy at extreme speeds. Newly designed scales fill one hopper as the other is being discharged into the bag. Unique double bulk and dribble feeders easily maintain 25 to 30 dumps per minute with unvarying accuracy. Accommodates 25 to 100 lb. bags. A control panel gives the operator a continual view of the scale's operation. Scale quickly pays for itself in labor and feed savings.**



**GUARANTEED:** Thayer Plate Leverage System eliminates knife-edge pivots, is not affected by dust, dirt, shock or vibration. Guaranteed accurate for the life of the scale.

**WRITE FOR FEED MILL MANUAL** containing application information and specifications.

THE Thayer SCALE

*THE THAYER SYSTEM OF PROCESS CONTROL BY WEIGHT

**AUTOWEIGHTION**

**THAYER SCALE CORP., 9 Thayer Park, Pembroke, Mass.**

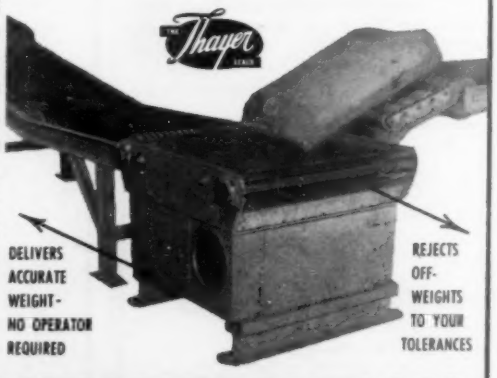
**BUY and SELL through WANT ADS**

*Save $ and troubles . . .*

A Thayer Checkweigher in your conveyor system **rejects off-weight packages to your tolerances.** An invaluable inspection tool that never closes its eyes on filling scales or operators. Thayer Plate Leverage System is **guaranteed accurate** for the life of the scale. Send for full information on Checkweighing to Save Feed and Keep Customers.

# CHECKWEIGH

*100% of production*




**THAYER SCALE CORP.**
**9 THAYER PARK**
**PEMBROKE, MASS.**

**AUTOWEIGHTION**

## Missouri Researcher Reports Additive Tests With Swine

COLUMBIA, MO. — Dr. Leland Tribble of the University of Missouri recently reported on studies with various additives in rations for swine. He said that pigs fed rations containing antibiotics throughout their growing and fattening stages did not make significantly greater gains than pigs in control lots.

Dr. Tribble said two feeding trials were made testing the antibiotic supplements. The tests included 140 pigs divided into 14 equal lots of 10 pigs each.

He reported the results as follows:

In the first trial, involving six lots, pigs receiving a basal ration plus sulfaquinoxaline and streptomycin mixture gained 1.82 lb. daily—the best in the test. One lot receiving an Aureomycin supplement gained 1.68 lb., lowest in the test.

The check lot of pigs gained 1.73 lb. daily.

Of the remaining three lots of pigs used in the first test, one received the basal ration supplemented with arsanilic acid and the third lot received an Aureomycin, sulfaquinoxaline and streptomycin mix in their ration.

Pigs used in the test averaged 55 lb. each and were in a good, thrifty condition at the start of the tests. All pigs had received Aureomycin in their feed prior to going on test.

This could be the reason no response was obtained from the addition of Aureomycin to the test ration.

The feed efficiency of all lots of pigs was exceptionally good. They made the best record in this respect of any group of pigs ever on test at the university. Feed efficiency figures ranged from a low of 285 lb. of feed per 100 lb. of gain to a high of 309 lb.

The second test was a duplication of the first except that two more lots of pigs were added. One of these two lots received the basal ration supplemented with hygromycin, while the second lot was fed both hygromycin and Aureomycin.

Gains of pigs on all treatments in the second test were satisfactory with the exception of the lot receiving the basal ration supplemented with arsanilic acid. Several pigs in this lot made slow gains and, as a result, weren't as uniform as other pigs in the test.

However, pigs fed the combination of arsanilic acid and Aureomycin made gains equal to the lot receiving only Aureomycin. Therefore, the slow gains of the pigs on arsanilic acid wouldn't appear to be due to any toxic effect of the additive.

The two lots of pigs getting supplements of hygromycin and Aureomycin alone made the best daily gain in the second test. They gained at the rate of 1.8 lb. daily, as compared to 1.59 lb. daily gain of the check group and 1.49 lb. daily gain made by the pigs getting arsanilic acid.

Feed efficiency figures of the 80 pigs in the second trial were not as good as those obtained in the first test, and ranged from a low of 347 lb. of feed per cwt. of gain to a high of 393 lb.

In addition to checking gain records, worm egg counts were made at the end of the feeding trials of four lots of pigs. They were the check, Aureomycin, hygromycin and Aureomycin plus hygromycin lots.

No round worm eggs were found in the lots of pigs getting hygromycin alone or in combination with Aureomycin. Pigs in the check lot and those getting only Aureomycin had 470 and 440 round worm eggs per gram of feces, respectively.

## Wirthmore Sponsors Dairy Judging Trip

WALTHAM, MASS. — A two-day dairy cattle judging tour was recently sponsored by Wirthmore Feeds, Inc., Waltham, for 26 New Hampshire 4-H Club members.

After regional judging the results were averaged in with results posted by contestants at Plymouth Fair. The highest ranking team of three and an alternate not on the winning team will meet other young New England dairy judges at Eastern States Exposition. Later they will compete with the nation's best young judges at the National Dairy Congress in Waterloo, Iowa.

Wirthmore sponsors the annual judging trips to provide practical experience in judging and to give the youngsters a preview of what they will face later in state-wide competition.

## ALABAMA LIVESTOCK SALES EXCEED ROW CROPS

**AUBURN, ALA. — For the first time in Alabama history, the state's livestock sales in 1957 exceeded those of row crops, and the trend toward production of meat animals is continuing, according to Ray Cavender, API extension hog marketing specialist. He reported that a bumper corn yield is due this year, "and since corn and hogs go together, I suggest that more farmers think about marketing their corn through hogs." Livestock sales in the state in 1957 were $41 million, he reported, and Alabama's production of pork is now only 2% of the pork grown in the U.S. "Therefore," Mr. Cavender said, "farmers here could double their production and still have no effect on the hog market."**


SPECIFY
Columbia Calcium
COLUMBIA QUARRY CO.
1007 Washington Ave.
ST. LOUIS 1, MO.

ROLLED OATS
GROUND OAT GROATS
FEEDING OATMEAL FLOUR
PULVERIZED WHITE OATS
PULVERIZED FEED OATS
HY-QUALITY OATMILL FEED
REGROUND OAT FEED
COARSE GROUND OATS
WERTZ FEED PRODUCTS
SIOUX CITY, IOWA
Phone 20545

Turkeyland USA reports on Whitmoyer CARB-O-SEP
Patent Pending

NO BLACKHEAD OUTBREAKS ON CARB-O-SEP
Not one case of blackhead with CARB-O-SEP fed birds, although blackhead was prevalent through his entire area reported a mid-western serviceman.

CHAMPIONS CARB-O-SEP FED
CARB-O-SEP fed birds dominated the championships at the Michigan Turkey Festival. Five Grand Champion birds and the Largest Bird at the Show were CARB-O-SEP fed.

FEED MANUFACTURER TESTS CARB-O-SEP AGAINST ANOTHER LEADING PREVENTIVE
No outbreaks on CARB-O-SEP . . . three outbreaks in other group. CARB-O-SEP birds were in better shape at marketing . . . feed conversion was better.

PENNSYLVANIA GROWER ENDS RANGE BLACKHEAD PROBLEM
Blackhead outbreaks were an annual problem. Last year he tried CARB-O-SEP and raised top quality birds—with no blackhead losses.

BREEDER AND GROWER PUTS ALL HIS TURKEYS ON CARB-O-SEP
5,000 breeders and later in the season 30,000 meat birds put on CARB-O-SEP. Fertility and hatchability good.

PROMINENT EASTERN GROWER CLEARS UP BLACKHEAD
This grower, with a flock of 40,000 Broad Breasted Bronze Turkeys, found CARB-O-SEP cleared up blackhead and prevented any further losses. The birds were marketed with a good finish.

CARB-O-SEP FED BIRDS WIN AT NATIONAL TURKEY CONVENTION
CARB-O-SEP fed entries were among the important prize-winners at the National Turkey Convention at St. Louis.

CARB-O-SEP was developed by WHITMOYER research. *It is the safe, potent way to get healthy, blackhead-free growth.*

MIX CARB-O-SEP IN YOUR TURKEY MASH
Give your turkey mash the best opportunity to furnish the full measure of fast, healthy growth that you so carefully put into it.
IT'S PROFITABLE FOR BOTH YOU ...AND THE GROWER

Whitmoyer LABORATORIES, INC.
MANUFACTURING CHEMISTS
MYERSTOWN, PENNA., U.S.A.
PRODUCTS OF SCIENTIFIC MERIT

For complete information and scientific data on CARB-O-SEP Write Box FS-9 • In Canada Whitmoyer Laboratories, Ltd., Port Credit (Toronto Twp.), Ontario

# More weight ...less wait

## when feed contains Tecmangam

Feed fortified with Tecmangam is fortified with manganese—a necessary growth element.

Manganese helps chicks gain weight faster. Also, manganese protects against perosis... reduces shell breakage... increases egg production and hatchability.

Free-flowing, non-dusting Tecmangam is the clean, economical way to add manganese to feeds deficient in this element. It contains 75-78% manganese sulphate, is completely soluble and readily assimilated. Use at least one pound per ton of feed.

Fortify your feed with

**tecmangam**

EASTMAN MANGANESE SULPHATE

Eastman CHEMICAL PRODUCTS, INC.

KINGSPORT, TENNESSEE, subsidiary of EASTMAN KODAK COMPANY

**NEW OFFICERS—Some of the officers elected at a recent dinner meeting in Minneapolis of the Northwest Feed Manufacturers Assn. are shown. They are (left to right, front row): A. H. Roffers, Northwest Cooperative Mills, Inc., St. Paul, vice president; Dick Blomfield, Blomfield-Swanson, Minneapolis, treasurer; Ted Harstad, Doughboy Industries, Inc., New Richmond, Wis., president; Roger Berglund, Feedstuffs, Minneapolis, secretary, and Howard Herron, General Mills, Inc., Minneapolis, vice president. Association directors include (left to right, back row): Earl Hanson, Archer-Daniels-Midland Co.; Ogden Confer, Hubbard Milling Co., Mankato, Minn.; George Gates, Feedstuffs; L. O. Kindstrom, Kindstrom-Schmoll Co.; J. H. Conlee (outgoing president), Osborne-McMillan Elevator Co., and J. C. North, Nutrena Mills. (Directors shown are from Minneapolis except when otherwise indicated.) Directors not shown are Ralph Van Hoven, Van Hoven Co., St. Paul; Clifford J. Olson, Glencoe (Minn.) Mills, and Mel Pearson, Land O'Lakes Creameries, Minneapolis. A vice president not in the picture is Frank Heffelfinger II, Peavey Feed Mills, Minneapolis.**

## Hog Gain Decides Feed Cost With New Contract Plan

COLUMBUS GROVE, OHIO—J. W. Zuercher, treasurer of the Grovedale Feed Co. here, has explained a new idea in hog contracts: The contract is based on the efficiency of the feed, with the farmer paying the dealer a certain amount for every pound of gain on the hogs.

Explaining the plan, Mr. Zuercher said the farmer furnishes the young pigs weighing from 30 to 60 lb.; vaccinates and castrates them before the contracts begin; provides at least 13 sq. ft. of concrete slab for each hog plus 5 sq. ft. of covered sleeping area and a feeder with one lid for every three pigs; pays for veterinary service; and markets all of the pigs within a three-week period weighing as near to 205 lb. as possible.

Dead pigs are weighed at death and the farmer must pay for the cost of the gain plus the lost pig.

Meanwhile, Grovedale company will furnish and deliver the necessary feed and sanitation items, weigh, deworm and spray each pig prior to the feeding period; and charge a minimum of $10 per cwt. of gain. The pricing formula is actually the price of the corn times the gain times 8.7.

Many farmers have already been showing good profits with the new system, Mr. Zuercher said. One Ohio man gained about $10 per head profit on two groups of 50 market hogs. Another Pennsylvania farmer utilized some extra barn space for 80 feeder pigs and ended up with about $700 profit.

Some farmers have been buying their own pig starter and picking up the contract after the pigs are heavier than 60 lb., Mr. Zuercher said.

He noted that the farmer himself owns the hogs and markets them where he wishes.

### CELEBRATES ANNIVERSARY

ST. LOUIS—Open house was held at Robertson's Farm Supply, Inc., here recently to celebrate the 40th anniversary of the firm. The company, which deals with a full line of farm supplies, was founded in 1918 by H. H. Robertson. It is currently operated by J. W. Reid. As a prelude to the celebration, the 52 employees of the firm were given a dinner. A. J. Berwick, vice president of the Doane Agricultural Service, Inc., was guest speaker.

## Erects Feed Mill

RALEIGH, MISS.—Sanderson Brothers, Laurel, Miss., is building a 100-ton feed mill here to help supply the 300,000 broilers it has on feed in Smith county. Dewey Sanderson will manage the Raleigh operation.

Another Raleigh poultry development is the announcement that H. B. and J. W. Ashley, Raleigh, who have been in the contract hauling business, are building eight 13,000-unit broiler houses on two farms. Four of the houses are reported to be nearly ready for chicks.


Imported

**FISH MEAL**

PROMPT and DEFERRED SHIPMENTS

•

*Anchovy Meal*

*Herring Meal*

*Sardine Meal*

*White Fish Meal*

•

**FULL MEAL**

*(Fishmeal with Solubles)*

•

**FISH SOLUBLES**

*Dried 100% Pure*

*Made of South African Pilchards*

•

UNEXTRACTED ANIMAL LIVER and GLANDULAR MEAL

•

STEAMED BONE MEAL

•

DICALCIUM PHOSPHATE

•

VITAMIN "A" FISH LIVER OIL

•

**ALBUMINA**

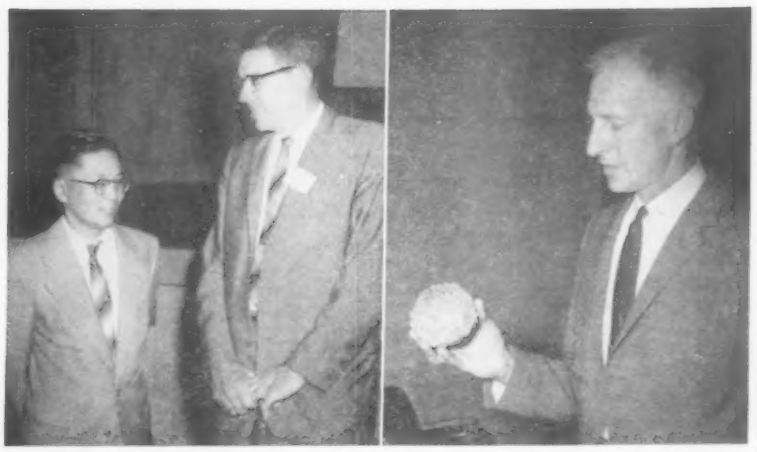
SUPPLY CO., Inc.

82 Beaver Street

NEW YORK 5, N.Y.

Phone: HAnover 2-4174

Teletype: NY 1-3788



**MINNESOTA SPEAKERS—One of the topics discussed at the recent Animal Nutrition and Health Short Course at the University of Minnesota, St. Paul, was beef cattle feeding. One of the speakers on this subject was Dr. John Matsushima (left in the first photo) of the University of Nebraska. He is shown with Dr. C. L. Cole of the University of Minnesota, who was short course chairman. In the second picture is Prof. R. J. Webb of the University of Illinois' Dixon Springs Experiment Station, who told of developments in pelleting roughage and complete rations for beef cattle and sheep. He is pictured as he shows a hay wafer, made by compressing hay in a new experimental machine.**

## International Minerals Reports Earnings Off

CHICAGO—International Minerals & Chemical Corp., Skokie, Ill., has reported net earnings after taxes of $5,273,000 or $2.09 per common share for the fiscal year ended June 30, 1958.

This compares with earnings of $6,961,000, or $2.81 on the 2,337,287 common shares outstanding, for the 1956-57 fiscal year.

The 1957-58 net earnings included a non-recurring credit of $331,990, resulting from a change in the company's pension plans from an insured to a trusteed basis.

Sales for the 12 months just ended totaled $103,663,000, compared with $106,189,000. Earnings before taxes were $6,303.000 compared with $8,536,000.

Earnings for the fourth quarter of the 1957-58 fiscal year totaled $2,753,000, or $1.14 per common share, with the pension credit included. Last year's earnings were $2,717,000, or $1.12 per share. Sales for the quarter just ended were $33,138,000 compared with $33,575,000.

Louis Ware, board chairman, said that the sales decline, which occurred principally in the third fiscal quarter, reflected the general downturn in the nation's economy. He noted that potash export shipments were down for the most part because of accumulated inventories and dollar shortages in the foreign markets.

Although sales of mixed fertilizers increased for the year, Mr. Ware said that profit margins were narrowed by unusual price competition when adverse weather conditions caused a delay in spring buying. The general recession in the automotive and construction industries curtailed profits in the company's industrial minerals business, he said.

The report said the company's "relatively new and fast growing phosphate chemicals division," producer of dicalcium phosphate for animal feed along with other products, is an important user of phosphate rock. The division's Bonnie, Fla., plant is the largest producer of dicalcium phosphate in the U.S.

"This concentrated and assimilable animal feed supplement is being used in increasing amounts," the report said. "In addition, the two plants of the division's Tennessee department are important manufacturers of defluorinated phosphates for animal feeds."

## Freight Cut Approved For Westbound Hogs

PORTLAND, ORE.—Western railroads have approved a shippers' proposal for a westbound freight rate reduction on hog shipments from the Midwest.

A railroad spokesman here said that effective Oct. 20, the rate on double-deck shipments of hogs from the Corn Belt area to all West Coast points will be cut 12% by the elimination of two recent freight rate increases of 9% and 3%.

This is said to be an important action for western meat packers and consumers since nearly 80% of the hogs consumed here are shipped in from the Midwest.

*keep fully covered by handling*

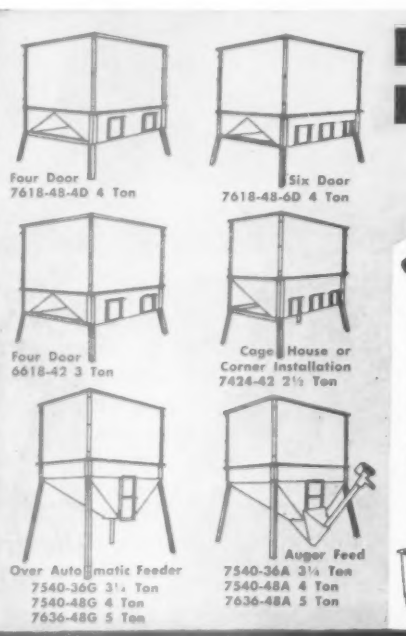
**Shellbuilder**

*pure crushed reef oyster shell*

Shellbuilder Co.
Melrose Bldg. • Houston, Texas

**LA BUDDE**
MILWAUKEE, WIS.

MALT SPROUTS
BREWERS GRAINS
DISTILLERS GRAINS
BEET PULP
AND 44 OTHER FEEDS




**BUILT TO LAST**
*Lemanco*
**INSIDE BULK FEED BINS**

Economical per ton storage, plus convenience . . . that's the answer to the popularity of LEMANCO all-steel bins for poultry houses and other types of bulk feeding operations.

Bases—all welded 14 gauge steel; sides—16 gauge galvanized steel; legs—¼" angles. Specially formed corners for extra reinforcement.

**Make your investment pay over the long haul. Write today for further information.**

**LEACH MANUFACTURING CO.**
P. O. Box 215 — Alabama City Station — GADSDEN, ALABAMA — Telephone Liberty 7-5472

Water soluble

Rapidly absorbed

Fast, effective protection against hemorrhagic disease

Economical

Completely stable potency

*U.S. Patents 2,331,808 & 2,367,302

Dept. FS-927
Please rush complete information on Hetrogen K and latest reports on Vitamin K research.
Firm Name _____
Individual _____
Address _____

Hetrogen K is available as an easy to use premix and as a free flowing concentrate. Recommended for medication of drinking water. For complete information, write or call collect:

**HETEROCHEMICAL CORPORATION,** 111 E. Hawthorne Avenue, Valley Stream, Long Island, N. Y. • LOcust 1-8225

## "Critical Decision" Is Theme of 1958 NEPPCO Exposition

HARRISBURG, PA.—Plans for the Northeastern Poultry Producers Council Exposition, to be held here Oct. 7-9, have been announced.

According to NEPPCO officials, the program will be based on "the possibility that the poultry industry of the Northeast may be at the brink of a critical decision—both from the standpoint of merchandising its products effectively and adoption of the production tools that will help it hold its place in the national picture."

Opening day highlights, the council reports, include a discussion on the started pullet business, one of the newer developments on the poultry scene. Also scheduled for the opening session is a discussion on ventilation heating. According to the council, these subjects are key ingredients in the production side of the future.

The second day will be taken up with the topic of sales promotion, merchandising and advertising. Experts taking part in these sessions are expected to help the industry get back on the track toward sounder programs for the future, council spokesmen said.

A discussion panel on poultry economics will be featured on the final day. An examination of the present and future prospects for the poultry industry in the Northeast will be included, officials said.

To be held in conjunction with the NEPPCO Exposition will be a one-day education program under the sponsorship of the council's turkey division. This session is slated for Oct. 7 and will include a three-man panel discussion on pole shelters for turkeys, a film showing results of studies on quarter turkey marketing, and a forum on the National Turkey Marketing Act to wind up the day's activities.

## British Desire U.S. Poultry Products

WASHINGTON—Reporting on the U.S. exhibit at the British Food Fair in London, the U.S. Department of Agriculture says there is a desire on the part of British housewives and distributors to purchase attractively displayed U.S. poultry products.

Pre-cooked, ready-to-heat-and-serve poultry products at the fair for the most part are new to British consumers, as are packaged cake mixes containing egg solids, according to the USDA.

"There is hope that with improved economic conditions these poultry products may soon be permitted entry into the United Kingdom. U.S. exhibitors feel that if they are, it will increase consumption and provide expanded markets beneficial to the British poultry industry and to U.S. feed grain exporters," it was stated in the report.

Norris N. Nedela

**SALES REPRESENTATIVE — Norris N. Nedela has been appointed regional sales representative for the Ray Ewing Co., Pasadena, Cal., according to Jack Pionsky, executive vice president of the company. With headquarters in Omaha, Neb., Mr. Nedela will work with Hank Wilder, regional sales manager of the firm, in servicing parts of Nebraska, South Dakota and Iowa. Mr. Nedela formerly worked for the Crete (Neb.) Mills, and more recently operated a feed mill in Colorado Springs and was sales representative for a chemical and feed supplement firm in the Midwest.**

## Missouri Schedules Sheep Trial Reports

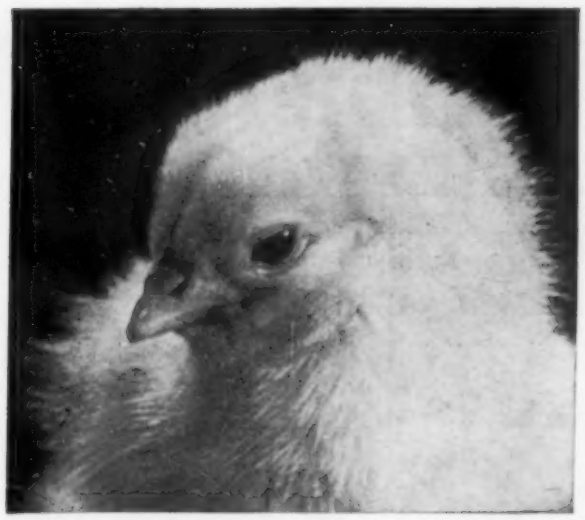
COLUMBIA, MO.—Reports on results of sheep feeding, breeding and management research will make up a large part of the University of Missouri Sheep Day program scheduled Nov. 15 at Columbia.

Dr. C. V. Ross, animal husbandry department, has announced that talks will include reports on wintering trials, palatability tests on creep rations for lambs, the use of hexestrol in fattening rations, methods of controlling internal parasites and other research work completed recently or now under way.

The morning part of the program will be held at the Livestock Pavilion, while the afternoon program will be held at the Student Union, both on the campus.

## Name Traffic Manager

SALINA, KANSAS — Keith Cockrell has been employed as traffic manager by the C-G-F Grain Co. here. He was formerly traffic manager for the Farmers Union Jobbing Assn., Kansas City.

*Give your feeds this pure whey extra:*

**KRACO**

*the fresh-dried whole whey that's naturally sweet*

- no neutralizers added to upset milk mineral balance
- no fermentation to reduce high lactose content*

**Kraco is guaranteed at least 65% lactose—runs are usually between 70-72%*

When you supplement feeds with Kraco, you are using *pure* whey. Nothing has been added, nothing taken away. In processing Kraco, Kraft safeguards its freshness and sweetness in two vital ways:

1st: The whey from low-acid cheese is used.

2nd: It is dried within hours after it is drawn from the cheese vats. Acid content is guaranteed at not more than 3.5%.

Kraco contains all the whey nutrients, including the valuable whey factor, lactose (minimum 65%), milk protein (12%, mostly lactalbumin), milk minerals and B complex vitamins.

Ask the Kraft Man for full particulars.

**KRACO** *is a Kraft Product*

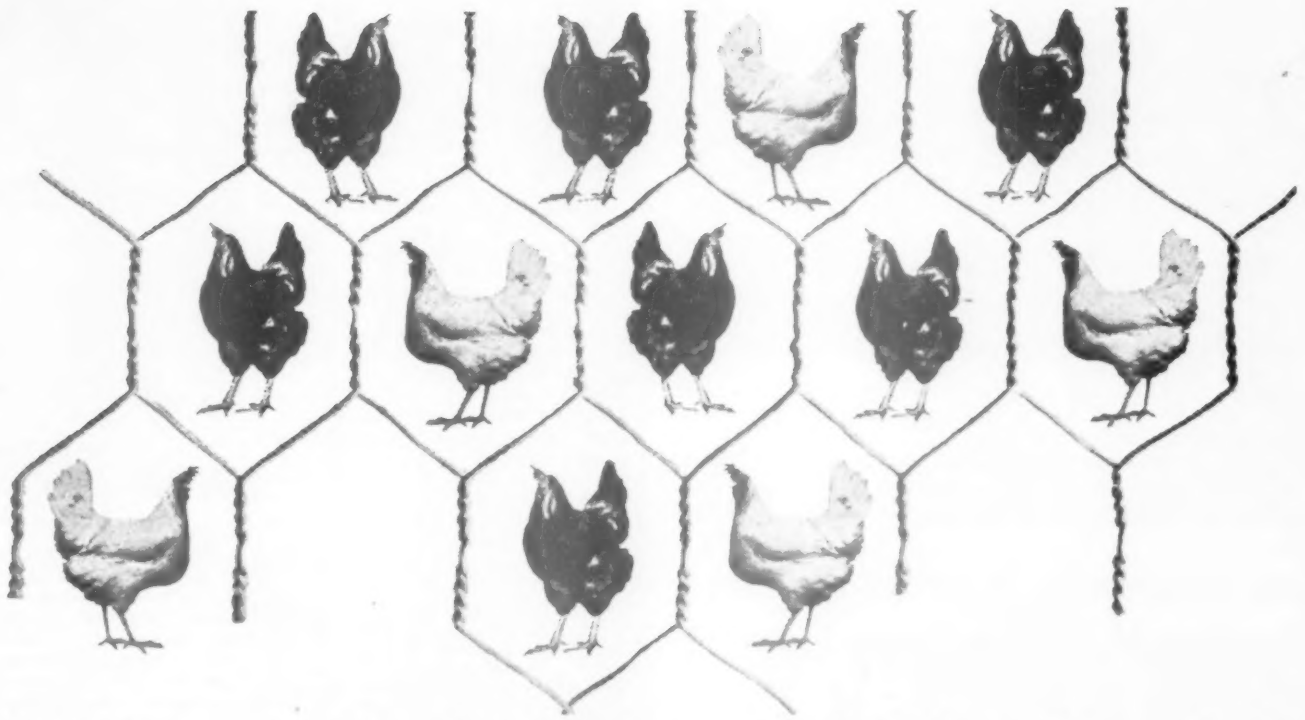
*Order from*
KRAFT FOODS *Div. of National Dairy Products Corp.*
500 Peshtigo Court, Chicago 90, Illinois

**THE BEST ROLLER MILL MADE**

W-W crimps, cracks or crumbles every kernel. Has hardened "mill-type" rolls; single control wheel adjustment; heavy cast iron framework. Available in 6" to 36" widths. Sensible time-payment plan.

W-W GRINDER CORP.
DEPT. 311—2957 No. Market Wichita 4, Kans.

REMEMBER TO ORDER
**CHASE BAGS**
*There's None Better!*



# CORONET Proves... Not Merely Claims... High Phosphorus Availability

## THE PROOF IS IN THE TESTING OF CDP

There is a WORLD OF DIFFERENCE between merely "claimed" and ACTUALLY PROVED biological availability of phosphorus feed supplements. Only through exhaustive feeding tests can the amount of usable phosphorus in a supplement be substantiated.

CDP's (Coronet Defluorinated Phosphate) high phosphorus availability has been tested and recognized by State Agricultural Experiment Stations and independent research laboratories not affiliated with Coronet. *Results of nutritional tests are available upon request.*

CDP's PROVEN high biological availability gives you ABSOLUTE ASSURANCE that your phosphorus dollar buys usable phosphorus which can be directly absorbed and easily converted to meat, eggs, and milk.

CDP . . . through exhaustive feeding tests at independent laboratories . . . PROVES . . . not merely claims . . . its high phosphorus availability.

### Guaranteed Uniform Analysis

| Phosphorus | Calcium | Fluorine |
|---|---|---|
| 17.0% min. | 34.0% min.<br>36.0% max. | 0.17% max. |

### Solubility Comparison of CDP With Other Defluorinated Phosphates

| PRODUCT | Solubility in 0.4% HCl | Solubility in 2% citric acid | Solubility in neutral ammonium citrate | Average total solubility |
|---|---|---|---|---|
| CDP | 100.00% | 87.14% | 86.16% | 91.10% |
| Product A | 96.48% | 51.19% | 19.41% | 55.69% |
| Product B | 82.79% | 38.61% | 9.08% | 43.49% |

**Let us figure the cost of CDP delivered to your plant**

*Coronet...50 years of research...quality control...service*

CDP CORONET PHOSPHATE COMPANY
Norfolk 1, Virginia
A Division of **Smith-Douglass Company**, Inc.

**INDIVIDUAL CALF UNITS — Dairy calves fostered in Nutrena Mills' Calfloos are shown lined up in their isolation units at the firm's research farm near Elk River, Minn. Placed in the units soon after birth, the calves have no physical contact with one another or with other animals for the first three months of their lives. Eight feet of space between individual houses assures protection from airborne microorganisms, according to Nutrena.**

# Nutrena Announces "Calfloo" System For Housing, Managing Dairy Calves

MINNEAPOLIS — A new dairy calf-raising program, called the "Calfloo" system, has been announced by Nutrena Mills, Inc., feed subsidiary of Cargill, Inc.

The calf system is based on principles of isolation and disease prevention which, the company said, are similar in many respects to its "Pigloo" swine production program introduced earlier this year. Core of both units is an isolation house and exercise pen in which young animals are reported to develop relatively free from parasites and the cross-exchange of microorganisms that cause disease.

Need for a means to reduce disease death losses was pointed out by Nutrena's president, James C. North, who said, "Approximately 1.9 million dairy heifer calves will die from disease this year. Figuring their value conservatively at $50 per calf, dairymen are losing $95 million in 1958 and this doesn't include the bull calves."

**Cite Demonstrations**

Mr. North said the isolation principle has been applied to calf raising by several leading dairy authorities —Dr. William Petersen of the University of Minnesota; Carl Lueder of Fayette, Iowa, prominent dairy breeder and producer, and both the U.S. Regional Animal Disease Laboratory and Alabama Polytechnic Institute at Auburn, Ala. He added, however, that Nutrena's system is the first to put it to commercial use for the average dairy operator.

Nutrena has Calfloo test sites in Tennessee and at its Elk River, Minn. research farm, directed by Dr. Cloy B. Knodt.

According to Nutrena:

1. Disease death losses of dairy calves—averaging some 20% nationally—were reported less than 5%, among both farm and university-raised calves, when isolation was employed.

2. Placing each calf in a Calfloo immediately following birth eliminates problems created ordinarily by calves' instinctive sucking of each other's ears and udders.

3. Cleaning is simplified by Calfloo housing. Residue is picked up only after the calf has been removed from the unit and the unit itself moved to clean ground.

4. Construction costs are low. A Calfloo requires less than $50 in materials and is built from free plans provided by Nutrena.

5. Barn space usually reserved for calves is made available for more income-producing milk cows.

6. A feeding program complements the isolation system by concentrating on the calf's changing nutritional needs at each stage of growth.

**Unit Described**

The trademarked Calfloo unit—developed principally by Nutrena animal husbandry specialists, James R. McDougall and James Collins, working with Dr. Knodt—is a flat-roofed, air-tight (except for the door) house 4 ft. high, 4 ft. wide and 6 ft. long. It opens through a 2-foot-wide ground-to-roof doorway into a detachable, uncovered exercise pen 4 ft. high, 4 ft. wide and 8 ft. long. The unit rests on the ground, back to prevailing winds. The house is bedded 6 in. deep with straw or similar material to insulate the calf from cold or damp ground. Additional clean material is added as the bed settles. Nutrena recommends painting units with a non-lead paint and treating lower sections to prevent rotting.

The house's rear panel is hinged and can be folded over the roof during hot weather, giving the unit a cooling, breezeway-like effect. In cold weather, fresh air enters the Calfloo only at the bottom of the door; moist air, warmed by the calf's body heat, moves out the top of the door—a natural air circulation system which Nutrena says it found highly effective in the Pigloo. The flat roof and open doorway help prevent air being trapped inside, which causes condensation and other moisture problems.

Artificial heating is unnecessary, says Nutrena. They quote Dr. Petersen, the Minnesota dairy scientist, as saying, "Old arm-chair ideas about calves needing artificial heat are wrong. Our isolation-housed calves have prospered at temperatures as low as minus 34 degrees. We have found no evidence that calves either want or need heated housing."

**Feeding Unit**

Inside the Calfloo is a built-in feeding unit: Side-by-side holders into which buckets are lowered through a hinged panel in the roof —enabling the farmer to replenish feed, milk and water. The holders prevent the calf from tumbling feed and liquid into the bedding. Adjacent to the bucket holder is a hay-rack with a special trough to save the palatable, nutritious hay leaves that would ordinarily be lost in the bedding as the calf pulls hay from the rack.

Calfloos are spaced at least 8 ft. apart to help prevent transmission of airborne disease germs from one unit to the next—as is the case with the Pigloo. When the unit is vacated, it is thoroughly cleaned, sprayed with a sanitizer and tipped on its back, aired and sterilized by the sun for seven days, then moved to new ground, rebedded and made ready for the next occupant. Each Calfloo can be used up to three-plus times each year, depending on the size of the dairyman's herd and his breeding schedule.

The farmer enters the unit infrequently during the calf's three-month stay—to put the calf in the unit immediately after its birth and to teach the animal how to drink from a bucket. All other routine servicing and handling can be done from outside.

The unit is built by the dairyman from plans available at no expense through Nutrena dealers, who also provide information on handling and feeding of calves.

In the system, the cow is bedded in a clean, isolated pen prior to calving. As soon as the calf is born and the cow has dried it—often within an hour after birth—the calf is placed in a freshly-bedded Calfloo unit away from contact with other livestock.

**Feeding Program**

Under what Nutrena calls its "focused-feeding program" the calf is given colostrum and heavily fortified milk replacer its first few days. At six days of age, it has pelleted feed added to its diet. At two weeks, green alfalfa is fed to provide roughage for ruminating, with a gradual shift to mixed grass and legume hay. At six weeks the calf is switched to a grower ration. Feedings are made twice daily—preferably at the same time each day. At three months, the calf is turned out with other cattle.

**INSIDE VIEW — Viewed from the back with its rear panel raised for summer cooling, the Calfloo's interior shows the feeding unit, complete with separate buckets for wet and dry feeds, and a special rack for hay. Rear panel locks down over woven wire in cold weather. Folding panel in the roof is the entry for reaching in with feed. Door to exercise pen is left open year around, yet the unit requires no added heat in winter, says Nutrena.**

## Corn Millers Shift Office to Washington

WASHINGTON — The American Corn Millers Federation has moved its offices from Chicago to Washington, Spencer Werner, federation president, has announced. The new offices are at 1000 Connecticut Ave.

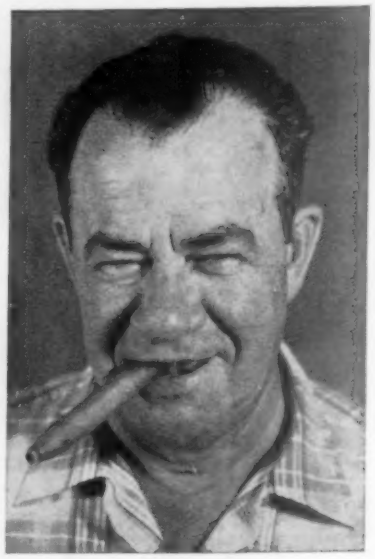
The federation is the national trade association for the dry corn milling industry whose members produce corn meal, grits and other corn products.

Donald M. Counihan, of the law firm of Carretta and Counihan, is continuing as general counsel to the federation.

Mr. Werner, in announcing the move, said: "Washington has become increasingly important to all business in recent years, including the dry corn milling industry. The needs of the federation and its members can best be served in the nation's capital."

**OPENS FEED STORE**

JEFFERSON, ORE.—The Marion-Linn Warehouse, recently destroyed by fire, opened the Jefferson Feed Store here. Jack Gilmour, owner, said Art Kunke will be the new manager.



**A. M. Covington**

**SALES REPRESENTATIVE—A. M. (Pappy) Covington has been appointed as a representative for the National Ideal Co., Toledo, Ohio. He will be located in eastern Texas, according to T. C. Bales, Jr., sales manager of the company. In 1947 Mr. Covington founded the "Louisiana Hayride" radio show on station KWKH in Shreveport, La. He has many years of experience selling feed and equipment throughout the Southwest. National Ideal manufactures Premier line of poultry and stock farm equipment.**

## USDA Referendum To Decide on Old Or New Corn Plan

WASHINGTON—A referendum to decide which of two alternative corn programs will be in effect in 1959 and subsequent years, has been set for Nov. 25, the U.S. Department of Agriculture announced.

A simple majority of voting producers in the 932-county commercial corn-producing area will decide whether there would be no acreage allotments or else a continuation of the present program.

Under the first alternative, no commercial corn-producing area would be designated, all corn producers would be eligible for price support without any restrictions on acreages and the level of price support would be 90% of the average corn price received by farmers during the three preceding years, but not less than 65% of parity.

The second alternative calls for the same acreage allotments and the same commercial corn-producing area as in the past. Producers in the commercial area, to be eligible for price support, would be required to plant within acreage allotments set for their farms. Price support would be from 75 to 90% of parity, with prospective record corn supplies indicating a level at or near the minimum.

Because of heavy corn supplies, USDA says, the allotment for 1959 would probably be about 33 million acres or approximately 15% below the 38,818,381-acre allotment for the 1958 crop.

Under the second plan, producers in the noncommercial area would be eligible for support at 75% of the commercial rate.

**WAREHOUSE DESTROYED**

FENN, IDAHO — A $220,000 fire destroyed the grain storage facilities of the Union Warehouse and Supply Co-op here. The building, loaded with barley, oats and peas, was completely consumed along with an adjoining community hall and two grain filled box cars. Warren Park, cooperative manager, said the warehouse and its contents, about 100,000 bu. barley, oats and peas, were covered by $210,000 in insurance.

# UP OR DOWN?

By Leonard W. Schruben

Agricultural Economist, Kansas State College

## Prices and Large Corn Crops

This year's corn crop is about to enter the record books with a total production within a few percentage points of the all-time high. What has been the general price pattern during years after large crops have been harvested? Since 1958 looks to be a large crop, what can be expected in the way of price behavior?

Following large corn crops since 1908, U.S. farm prices have reached seasonal lows after harvest most years. Recovery has been delayed with prices in December falling below October by a few cents in about 7 out of 10 years. November prices have been below those of October in over 9 out of 10 years.

By January, prices have begun to increase. In 6 out of 10 years the January prices have been above November and in 8 out of 10 years, January prices have been above those of December. In other words, during large crops, prices have bottomed out late in the season with December being the low month in about half of the years.

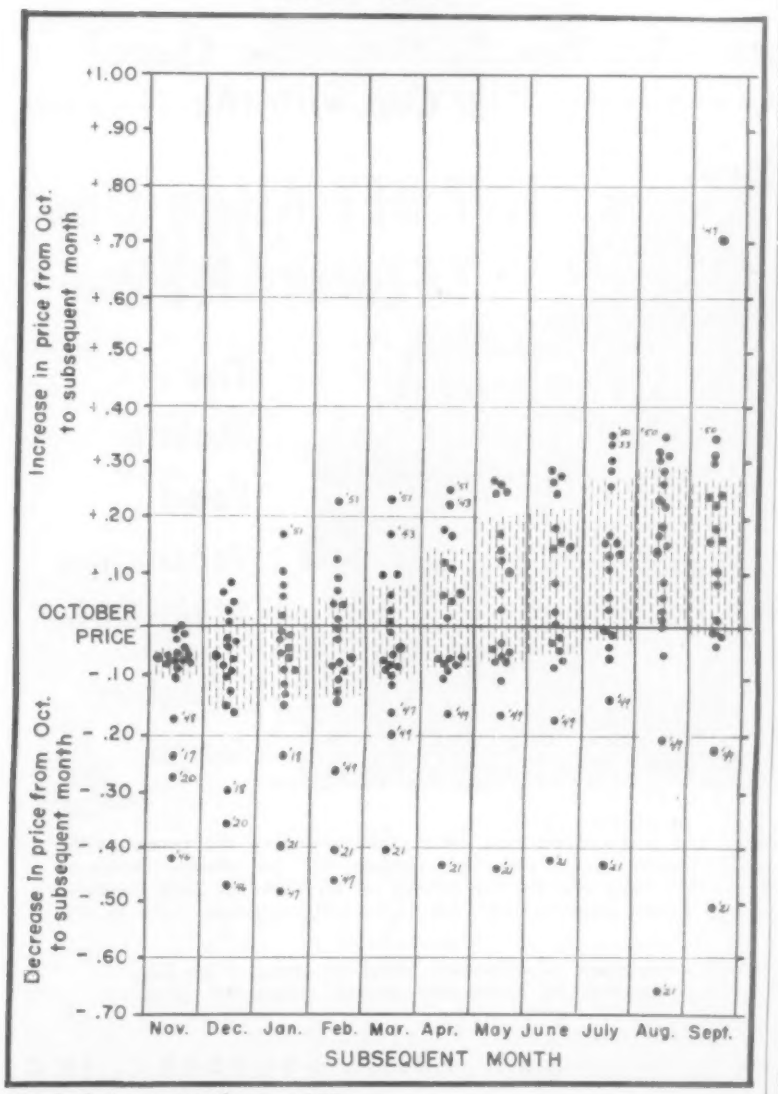
Generally, corn prices have advanced during the spring months and into the summer following large corn crops. For example, July prices have been above April prices every year since 1908 during years of large crops. Patterns following small crops are somewhat different; for example, prices in July advanced from April about 7 times out of 10.

Changes in U.S. farm corn prices from October to the following 11 months are shown in Exhibit 1. Here is how to read Exhibit 1. Each of the dots represent one year. Only years of large corn crops were used. The location of the dot shows the change in price from October to the following month indicated by heading of each column. A dot at the +5 level in the December column indicates prices advanced 5¢ from October to December during one of the years.

By noting the location of the dots

**EXHIBIT 1. Corn: U.S. farm price, change from October to subsequent months in years of large corn crops, 1908-57.**

CORN: U.S. Farm Price
Change from October to Subsequent Months
YEARS OF LARGE CORN CROPS
1908-1957




Each dot represents a year.
Half of the dots are in the shaded area.

PUT GUARANTEED POTENCY RESULTS INTO YOUR OWN FEEDS AT LOW COST!

• YOU'LL INCREASE YOUR FEED SALES! • GET MORE REPEAT BUSINESS!
• GAIN HUNDREDS OF SATISFIED CUSTOMERS!

Feed Manufacturers everywhere are cashing in now on the HIGH POTENCY VITAMIN FORTIFICATION trend in feeds. They know that with JERSEE VITAL-MIN they have a fine PRE-MIX that has never failed to give results of guaranteed potency.

JERSEE VITAL-MIN
A TOP QUALITY MULTI-VITAMIN PRE-MIX

Contains the necessary Vitamins, Antibiotics, Amino Acids, and Trace Minerals. Now you can Vitamin Fortify your own feeds with guaranteed potency for just a few cents a bag. JERSEE VITAL-MIN makes your feeds better, brings you more new business, repeat orders and a host of satisfied customers.

WRITE TODAY FOR DEALER'S SALES HELPS

Jersee jobbers and warehouses from coast to coast are eager to help you stabilize your feeds with Jersee Vital-Min.

JERSEEize TO MAKE PROFITS RISE!

JERSEE VITAL-MIN a Pre-Mix VITAMINS MINERALS

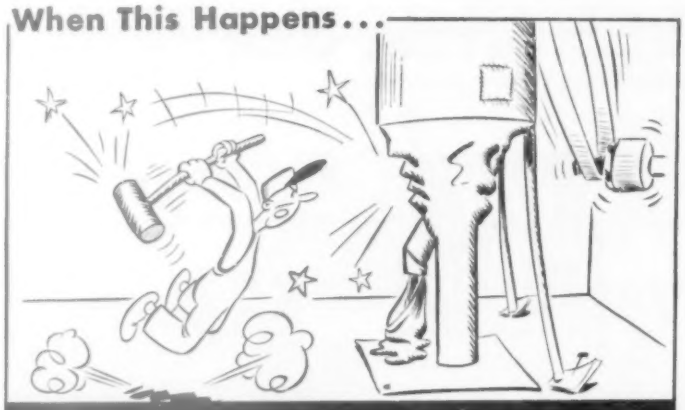
THE JERSEE CO. MINNEAPOLIS MINNESOTA

CARGILL

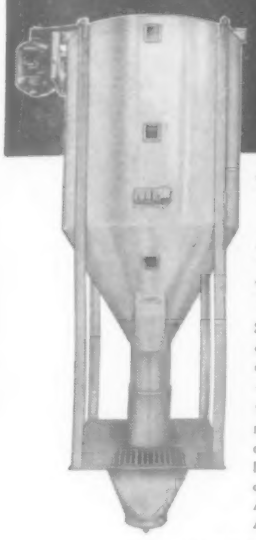
CargiH CREATIVE PROCESSING

CREATIVE PROCESSORS OF FARM PRODUCTS

When This Happens...



YOU NEED A FORDS VERTICAL MIXER



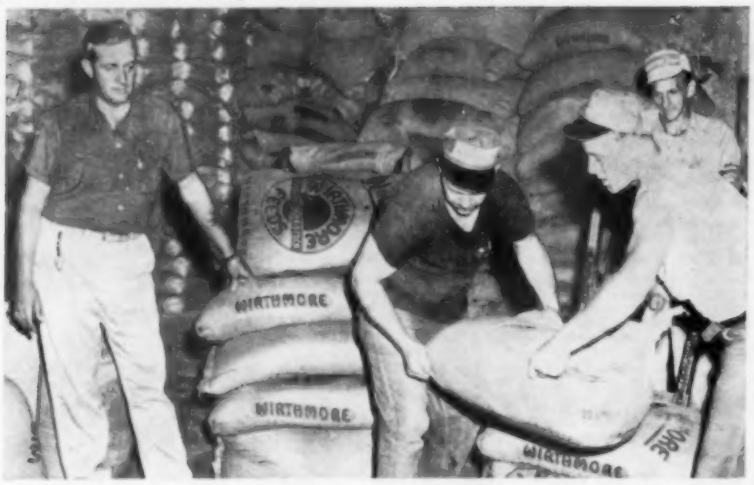
★ Designed For Fast Loading and Unloading *Without Bridging*
★ Thorough Uniform Mixing
★ Dust-Tight Positive Bagger

Special agitating arms prevent bridging and assures quick, clean emptying of mix. Easy to install and operate with present equipment. Loads top or bottom—clean, fast . . . no waste. "Flinger" at top of conveyor tube thoroughly distributes ingredients—cuts mixing time. Bagger has positive, non-jamming cut-off valve, operating in a dust-tight housing. Ball bearing equipped screw conveyor is "balanced" for quiet, smooth operation. Motor mounted as desired. All-steel, electric welded construction throughout. Available in 3 capacities: 2000, 3000 and 4000 lbs.

NATIONWIDE SALES AND SERVICE
*Write for Literature and Name of Nearest Distributor*

MS MYERS-SHERMAN COMPANY
1801 S. ILLINOIS STREET • STREATOR, ILLINOIS

★ Buy and Sell Through WANT ADS ★




**FEED DONATED—Two tons of feed were recently donated by Wirthmore Feeds, Inc., Waltham, Mass., to accompany a shipment of 55 heifers shipped to Bremen, Germany, as part of an interfaith relief and rehabilitation effort to help war-ruined and agriculturally undeveloped countries. The shipment was sponsored by Evangelical and Reformed Churches in Iowa and the Social Action Committee of the Massachusetts and Rhode Island Conference. Since the plan was started in 1944, "Heifer Project, Inc.," has shipped a great number of livestock and poultry of various kinds to needy recipients. All the animals are donated as gifts. Ed Klemanski (left), manager of Wirthmore Stores, Danbury, Conn., looks on while Don Pomeroy, Stan Gould and Ed Shullery load the donated feed.**

you can see how often and the extent prices changed after October. The small number beside some of the dots indicates the year those changes occurred. This was done for a few of the years of special interest. The shaded band includes half of the years—the middle half.

As you can see, prices advanced after the winter months following a large harvest. This is not much different from the pattern set in years of medium and small crops except recovery seems to have occurred somewhat later in the season.

This year is a big crop year. We can expect prices to decline for several months. If history repeats, which it doesn't always do, prices will be higher by spring than during the late fall and early winter. Season's low prices likely will be reached in November this year.

**FEEDER EXPANDS MILLS**

FIVE POINTS, CAL.—Expansion plans for the feed yards here owned by J. E. O'Neill call for rebuilding the firm's mills. The construction work was brought about by increased demands for the bulk and packaged feed sold through the yards.

## U.S. Poultry & Egg Producers Association Sets Convention Plan

GREENSBORO, N.C. — The U.S. Poultry & Egg Producers Assn. has announced that its first annual convention to be held Oct. 28-30 will be a "session at which bearings will be taken as to where the poultry industry stands in the economic and legislative picture."

Scheduled for the Ambassador Hotel, Atlantic City, N.J., the convention will be a policy-making meeting, officials said. The theme is "The Producer and Marketing."

Two speakers have been announced. Roy Battles, assistant to the master of the National Grange, Washington, will speak at the banquent the evening of Oct. 29, and E. M. Norton, secretary of the National Milk Producers Federation, will speak the morning of Oct. 30.

The program also calls for a directors' meeting and president's reception the evening of Oct. 28. Scheduled Oct. 29 are meetings of the executive committee and the resolutions committee. On Oct. 30, there will be an eye-opener breakfast for directors, a general session which will include the president's report and a panel discussion.

The business session will be held the afternoon of Oct. 30. Called for on the program are election of directors, adoption of resolutions, treasurer's report and the board of directors meeting.

A program is also planned for ladies attending the convention. In addition to the planned program, there are tours.

Robert W. Scott, president of the association, has issued an open invitation to all producers of poultry and eggs to attend the sessions.

**CONVENTION CHAIRMAN — R. Parker Long, Quaker Oats Co., was chairman of the first annual Pet Foods Institute convention held recently in Chicago. He is shown here calling the convention to order and giving the welcome address.**

## Alabama Reports July Feed Tonnage Totals

MONTGOMERY, ALA.—Alabama feed tonnage for the month of July totaled 89,271.27 tons, according to a recent report from the Alabama State Department of Agriculture.

Nearly three fourths of the total was poultry feeds. Poultry feed tonnage was 65,943.40. Hog feeds totaled 4,492 tons, dairy feeds 6,558.92, oil meals 669.96, cereal byproducts 7,891.80, molasses 937.98, horse and mule feed 1,265.85 and all other feeds 7,891.80.


JAY BEE

*The Business is There—Are You Getting Your Share?*

*You Can with the*

**JAY BEE All-in-One® FEEDMAKER**

The Mobile Feed Processing Plant with "Texture Grind"

J. B. SEDBERRY, INC., Dept. F., Franklin, Tenn.

Please send me complete information about the Jay Bee All-in-One Feedmaker.

Name .....

Company .....

Street or Box .....

City ..... Zone .... State .....

For more business and more customers, take your service to the farmer with a Jay Bee All-in-One Feedmaker—a complete custom mill on wheels. Increase your sales and profits—save the farmer money — by blending your concentrates, minerals, and liquid molasses with his grain and roughage, right in his barnyard.

"TEXTURE GRIND"—Horsepower for horsepower, screen for screen, a Jay Bee is unexcelled for consistently uniform texture of grind.

To find out what the Jay Bee All-in-One can do for you, mail this coupon today!

J. B. SEDBERRY, INC.

FRANKLIN, TENNESSEE • TYLER, TEXAS

# Hello-o-o-o, Everybody!

here's the

## HESS & CLARK JAMBOREE

*starring*

## RED FOLEY

Singin' and Sellin' for Hess & Clark
(and you, too)

**FUN AND MUSIC**

Every Saturday on the MONITOR NBC Radio Network

"America's Favorite Country Music Man" is on the Hess & Clark team now! You can hear him every Saturday on NBC-MONITOR radio . . . coast-to-coast network of stations. Here's a down-to-earth show that millions of folks enjoy . . . good music, some hearty chuckles, and top-rated guest stars.

Red's singing for Hess & Clark . . . and for you, too. Be sure you tell your customers about this great entertainment . . . and be sure to feature nf-180 for increased egg production, Pen-FZ for mastitis, Bifuran for preventing coccidiosis, and Warfarat for positive rat and mouse control. Tie in with "Ol' Red" and increase your profits this fall and winter.

RF-1-B

**Featuring**

**nf-180®** brand of furazolidone

**for:** improved egg production, lower feed cost per dozen; disease control in swine, broilers, turkeys, and rabbits.

**for:** effective mastitis control — with special "buy-now" merchandising.

for effective rat and mouse control on the farm and in the home . . . exclusive A. P. L. Guaranteed.

**bifuran**

for effective coccidiosis control, solid lifetime immunity; non-toxic — prevents many secondary infections.

**HESS & CLARK INC.**

HESS & CLARK

Ashland, Ohio

**Leaders in new products and ideas for more profitable livestock and poultry**

# The Feed Man's Library

*Reader Service Department*

## Feedstuffs

### FEEDS AND FEEDING, 22nd Edition

*By Frank B. Morrison and Associates*

Feeds and Feeding has again been entirely revised, because of the many discoveries made in nutrition and livestock feeding. In this 22nd edition, particular emphasis is placed on the new developments. The numerous experiments are summarized which have dealt with antibiotic, arsenic and surfactant supplements, and with hormones, including stilbestrol. Full information is given concerning requirements of various classes of stock for the vitamins, including B and the unidentified factors. The Appendix Tables are enlarged by 40%, with composition and digestible nutrients of 1,100 feeds ..... **$9.50**

### ANIMAL NUTRITION, 4th Edition (1956)

*By Leonard A. Maynard*

It covers the standard, constantly-needed facts on feeding farm animals, and also the newly discovered facts about how certain acids, minerals, vitamins, etc., can help in raising healthier, more productive animals.
474 pages, 77 illustrations and tables ..... **$7.50**

### BEEF CATTLE, 4th Edition

*By Roscoe R. Snapp*

Covers breeding, feeds, feeding, economic trends, equipment, etc. Includes a report of hundreds of feeding experiments. Has a special chapter on sterility by Dr. Harry Hardenbrooks, Jr., assistant professor of veterinary medicine, University of Illinois. 641 pages ..... **$6.50**

### USE OF ANTIBIOTICS IN AGRICULTURE (1956)

*Proceedings of the First National Conference*

Held under the Auspices of the Agricultural Board and the Agricultural Research Institute, National Academy of Sciences, National Research Council, Oct. 19-21, 1955. Foreword by L. A. Maynard, chapters are sessions, presided over by C. F. Huffman, Damon Catron, H. D. Brunion, J. G. Horsfall and W. W. Spink. A collection of scientific papers and panel discussions by leaders in the field ..... **$2.50**

### RAISING LIVESTOCK

*By Walter H. Peters and G. P. Deyoe*

This book provides the owner, manager or caretaker of farm or ranch with easily found, specific suggestions for solving problems confronted in producing, handling and managing livestock, including preparing for market, selecting, feeding, housing, breeding and marketing influences. It tells of the many jobs to be done and exactly how to do them. 519 pages, 240 illustrations..... **$7.50**

### DAIRY CATTLE FEEDING and MANAGEMENT, 4th Edition

*By H. O. Henderson and Paul M. Reaves*

Based on the original work by Carl W. Larson and Fred S. Putney. Expanded 10%, the Fourth Edition adds new chapters on minerals and vitamins, and much recent material on hay-crop silage, grass land farming, dairy cattle health programs, and digestion in the rumen and milk secretion. Designed for use profitably by the student and the practicing dairyman. 614 pages..... **$6.50**

### DAIRY CATTLE—Selection, Feeding and Management, 4th Edition (1955)

*By W. W. Yapp and W. B. Nevens, Agricultural Experiment Station, University of Illinois*

Part 1—Dairy Farming; Part 2—Selection and Breeding; Part 3—Feeding; Part 4—Managing; Part 5—Financial Aspects; Part 6—Milk Secretion; Care and Merchandising; Part 7—Producing Roughages; Part 8—Providing Good Buildings; Part 9—The Future of Dairying. A recognized text of great value to all engaged in dairying, especially to students..... **$4.75**

### SWINE SCIENCE, 2nd Edition (1957)

*By M. E. Ensminger, Ph.D., State College of Washington, Head Department of Animal Science*

A complete yet easily understood reference for swine feeders, breeders and those in auxiliary services to them. Covers history and development of the industry, its distribution, adaptation and future; types and breeds, establishing the herd, meat type breeds, selection and judging, breeding, feeding, grains and high energy feeds, protein, vitamin and milling by-product feeds, pastures, buildings and equipment, health and disease prevention, marketing and slaughter, management and showing. 543 pages, 192 illustrations..... **$5.00**

### SWINE FEEDING AND NUTRITION (1957)

*By T. J. Cunha, Department of Animal Husbandry and Nutrition, University of Florida*

A new text for feeders, teachers of animal husbandry and their classes, county agents, nutritionists and workers in veterinary pharmaceuticals. Dr. Cunha is head of the Department of Animal Husbandry, a member of the Nutrition Committee of the American Society of Animal Production and the Swine Nutrient Requirements Committee of the National Research Council. The book includes reports on the most recent scientific feeding studies on swine.
300 pages, 47 tables, 46 illustrations ..... **$5.00**

### SWINE PRODUCTION, 2nd Edition (1956)

*By W. E. Carroll and J. L. Krider*

A guide to organization, establishment, management, feeding and marketing operations in raising of hogs. 498 pages, 65 illustrations..... **$7.00**

### RAISING SWINE—

*By George P. Deyoe*

A practical swine raiser's handbook. Stock selection, record keeping, feeding, care and handling, marketing techniques and preparing pork for home use. 447 pages, 201 illustrations, 40 tables ..... **$6.95**

### THE HANDBOOK OF FEEDSTUFFS (1957)

*By Rudolph Seiden and W. H. Pfander*

An encyclopedic presentation of production, formulation and medication. Designed to increase feed efficiency, explaining thousands of terms. Valuable to ranches and farms in production of feeds from right crops, utilization of plant as pasture, silage, hay, etc., and as an officially recognized feed product (meal, bran, grit, cake, etc.). Explanations and practical advice on medicated feeds, mineral feedstuffs, trace elements, growth stimulants and chemicals of importance to stockmen and poultry growers. Useful to feed manufacturers, nutritionists, students of animal biology, etc. 800 pages, 175 illustrations, cloth binding **$8.00**

### THE STOCKMAN'S HANDBOOK (1956)

*By M. E. Ensminger, M.S., M.A., Ph.D.*

Intended for stockmen, those who counsel with stockmen and for teachers in animal agriculture. First 120 pages particularly of interest to feed trade, as breeding and feeding of livestock are covered. Other chapters have to do with judging, management, marketing, etc. The 1956 edition is the fourth printing, indicating strong demand for this guide. 598 pages, well illustrated, many tables. A practical handbook ..... **$8.50**

### MANAGING FOR GREATER RETURNS in Country Elevator and Retail Farm Supply Businesses

*By Richard Phillips, Iowa State College economist*

Written as a basic reference book for elevator and farm store managers, this book includes valuable information on over-all planning and management. Some of the topics included are planning for maximum business efficiency, use of an effective accounting system, increasing employee productivity, improving customer relations, improving purchasing, management of credit and operation of custom services. 500 pages ..... **$7.00**

### SCIENTIFIC FEEDING OF CHICKENS (1955)

*By Dr. H. W. Titus*

A small but absolutely authentic and concise treatment of vital information for feeders and feed manufacturers. 43 formulas for diets and mashes, vitamin content of over 60 feedstuffs; what feedstuffs are best, deficiency diseases; also relationship between feed consumption and egg production.
297 pages, hard binding ..... **$4.00**

### THE GRAIN TRADE: How It Works (1956)

*By James S. Schonberg, Vice President, Uhlmann Grain Company*

A comprehensive book on the mechanics of merchandising and trading in cash and grain futures in the U.S. and Canada. Tells of what happens to grain following its purchase from the farmer, how it is graded, stored and conditioned, the establishing of price even before the crop is planted, the role of the university professor in the grain trade. This authoritative book will become the leading reference book on this subject for farmers, county agents, legislators, foreign buyers, government personnel, teachers, etc. ..... **$6.00**

### FEEDING POULTRY, 2nd Edition

*By Gustave F. Heuser, Professor, New York State College of Agriculture, and the School of Nutrition*

Meets the needs of poultry producers, feed dealers and poultry students for the latest authoritative information on how to raise the best poultry by employing modern feeding methods. It evaluates findings on the value of feeds, types of feed to be used and nutritive economy. Deals with feeding and management for various purposes, chicks, breeders and egg producers. 632 pages.... **$7.95**

### POULTRY NUTRITION, 4th Edition Revised and Enlarged

*By W. Ray Ewing*

1,500 pages, 133 illustrations, of practical, factual information for feed manufacturers, feed dealers, hatcherymen, breeders. New chapter on antibiotics, new growth charts, feed formulas for rapid growth..... **$12.50**

### POULTRY HUSBANDRY, 3rd Edition

*By Morley A. Jull*

526 pages, 254 illustrations, covers all aspects of the poultry business, from planning and building poultry plant to preparing poultry products for market. Breeding techniques, feeding procedures, disease control, incubation; it is an "encyclopedia" of poultry raising..... **$6.50**

### POULTRY PRODUCTION—

*By Leslie E. Card, Ph.D.*

Eighth Edition, 416 pages, 216 illustrations and four plates. Deals with broiler production, flock management and marketing, breeding and selection, nutrition, disease control, etc. ..... **$5.00**

### HATCHERY OPERATION AND MANAGEMENT

*By Ernest F. Funk and M. Richard Irwin*

New, 1955; a practical guide to hatchery operation for the experienced and inexperienced. Covers all phases of the business, including advertising, selling, office procedures, labor costs, equipment, chick selection, sexing, etc. 350 pages, well illustrated ..... **$7.50**

### SUCCESSFUL POULTRY MANAGEMENT, 2nd Edition

*By Morley A. Jull*

447 pages, 188 illustrations, based on practical experience, brings practical helps for choosing breeds, increasing broiler and egg production, building range shelters, estimating egg output, buying feed, candling eggs, etc. ..... **$5.75**

### KEEPING CHICKENS IN CAGES, 4th Edition (1956)

*By Roland C. Hartman, Editor Pacific Poultryman and Dale F. King, Dept. of Poultry Husbandry, Alabama Polytechnic Institute*

A thorough revision of this reliable work on cage laying plants. Newly illustrated and broadened in scope with addition of Professor Dale F. King as co-author. More about feeding-results of experiments with caged layers. The importance of protein and energy levels for the highly bred producing stock. 304 pages, 176 illustrations, cloth bound ..... **$5.00**

### TURKEY MANAGEMENT, 6th Edition (1955)

*By Stanley J. Marsden and J. Holmes Martin*

A text on turkey raising and marketing by Stanley J. Marsden, Poultry Husbandman at the U.S. Research Center, Beltsville, Md., and J. Holmes Martin, Head of the Poultry Department, Purdue University. Covers breeding, rearing, feeding, preparation for the market, shows, diseases and their prevention and control. 1,000 pages, 124 illustrations ..... **$7.00**

### THE FEED MIXERS HANDBOOK, 2nd Edition (1956)

*By Ross M. Sherwood*

A text for feed mixers with special reference to the nutritional aspects of feed formulation. A practical handbook for practical men.
208 pages, cloth bound ..... **$3.00**

***No C. O. D.'s***

**ORDER FROM**

Reader Service Department
Feedstuffs
P.O. Box 67
Minneapolis 1, Minn.

THE BORDEN COMPANY
*nutrition research laboratory and test farm*
ELGIN ILLINOIS

Test No. B25819-C

Product tested: Borden's MG 2X-400
Type of test: Broiler Report
Conditions: Floor pens
Chicks: Indian River Crosses
No. of chicks per pen: 100 (50 males, 50 females)
Length of test: Eight weeks, 2 days

| Pen No. | Diet | Weight Av. Lbs. | Feed Conversion |
|---|---|---|---|
| 1. | Basal* | 3.22 | 2.09 |
| 2. | Basal + 1.25% MG 2X-400 less 2% fish meal and less 2% distillers solubles | 3.11 | 2.09 |
| 3. | Basal + 1.25% MG 2X-400 less 3% fish meal and less 2% distillers dried solubles | 3.03 | 2.10 |

Note that use of MG 2X-400 in the formula permits substantial reduction in ingredient costs.

*Commercial-type ra
meat scraps, fish
meal, poultry by-p

THE BORDEN COMPANY
*nutrition research laboratory and test farm*
ELGIN ILLINOIS

Test No. B25819-B

Product tested: Borden's FERMACTO 400
Type of test: Broiler Report
Conditions: Floor pens
Chicks: Indian River Crosses
No. of chicks per pen: 100 (50 males, 50 females)
Length of test: Eight weeks, 2 days

| Pen No. | Diet | Weight Av. Lbs. | Feed Conversion |
|---|---|---|---|
| 1. | Basal* | 3.22 | 2.09 |
| 2. | Basal + 0.5% FERMACTO 400 less 2% fish meal | 3.17 | 2.07 |
| 3. | Basal + 0.5% FERMACTO 400 less 3% fish meal | 3.15 | 2.10 |
| 4. | Basal + 0.5% FERMACTO 400 less 2% fish meal, less 1.25% meat scraps, less 1.25% poultry by-product meal | 3.01 | 2.09 |

The use of FERMACTO 400 in the formula improves feed efficiency and reduces ingredient costs.

*Commercial-type ration, containing meat scraps, fish meal, feather meal, poultry by-product meal, etc.

HERE'S FURTHER PROOF OF QUALITY...

Yes, these actual terminal reports of recently-completed tests give continuing proof of the high quality of Borden's broiler feed fortifiers.

FERMACTO 400, Borden's exclusive blend of fermentation factors, can be added to your present formulas to promote extra efficiency and economy.

Borden's new MG 2X-400 supplies whey factor activity and FERMACTO 400 in one convenient, uniform blend.

Examine these test results carefully . . . *then write to us for complete product information.*

THE Borden COMPANY
FEED SUPPLEMENTS DEPARTMENT
350 Madison Avenue, New York 17, N.Y
LABORATORIES AND TEST FARMS, ELGIN, ILL.

BETTER FEEDS THROUGH RESEARCH

# Scientist Reviews Status of Pelleted Poultry Feeds

URBANA, ILL.—A brief review of pelleted poultry rations by Dr. D. J. Bray has been published by the University of Illinois in a booklet, "Pelleted Feeds for Livestock and Poultry."

Dr. Bray, department of animal science at the university, mentioned recent studies indicating that the pelleting process itself has a beneficial effect on some feed ingredients, namely certain unprocessed cereal grains, in addition to the established advantages of less bulky rations, less particle selection by birds, less feed waste and greater ease of handling.

He mentioned recent studies at Oregon and Washington in which various grains were pelleted and reground before being incorporated into non-pelleted rations. The scientist said it was concluded from one test that corn and rye were improved by the pelleting process as measured by chick growth, but that in another test neither corn nor barley appeared improved by pelleting.

Dr. Bray reported that recent work at the University of Illinois indicated that the greatest response from pelleting and regrinding corn used in a non-pelleted broiler ration occurs during the first 7-14 days and tends to disappear or decrease thereafter. Results of the test are presented in the following table:

**Per Cent Advantage in Weight Gained Per Week by Chicks Fed Pelleted Corn Over Chicks Fed Non-Pelleted Corn**

| Exp. No. | Days 1-7 | 7-14 | 14-21 | 21-28 |
|---|---|---|---|---|
| 1 | ... | 12.9* | 9.9 | 5.9 |
| 2 | ... | ... | 3.3† | .. |
| 3 | 17.2 | 15.9 | 11.8 | 9.9 |
| | 15.2 | 8.6 | ... | .. |
| 4 | ... | 2.4* | 3.6 | .. |
| | ... | ... | 5.4† | —1 |
| 5 | 13.3 | 10.8 | ... | .. |

*Experiment started with 7-day-old chicks.
†Experiment started with 14-day-old chicks.

In regard to the advantages in the actual physical form of pelleted feed, Dr. Bray referred to tests in which chicks fed rations containing corn ground through a 2/32-in. hammermill screen weighed 354 gm. at five weeks, while those fed rations containing corn processed through an 8/32-in. screen weighed only 303 gm. "The birds selected more corn from the latter rations. Pelleting will prevent this problem in rations containing coarsely ground ingredients," Dr. Bray said.

He mentioned other work which demonstrated the effect of pelleting high-fiber rations. Pelleted and non-pelleted rations containing 8, 13 and 18% fiber were fed to growing Leghorn pullets. As the level of fiber was increased, the growth response from pelleting increased. "Apparently the birds were able to consume more feed when bulky rations were compressed into pellets," the scientist commented.

In other tests it was observed that better growth and feed conversion resulted with no increase in feed intake for broilers fed pelleted high-barley rations than for those fed non-pelleted rations, according to Dr. Bray.

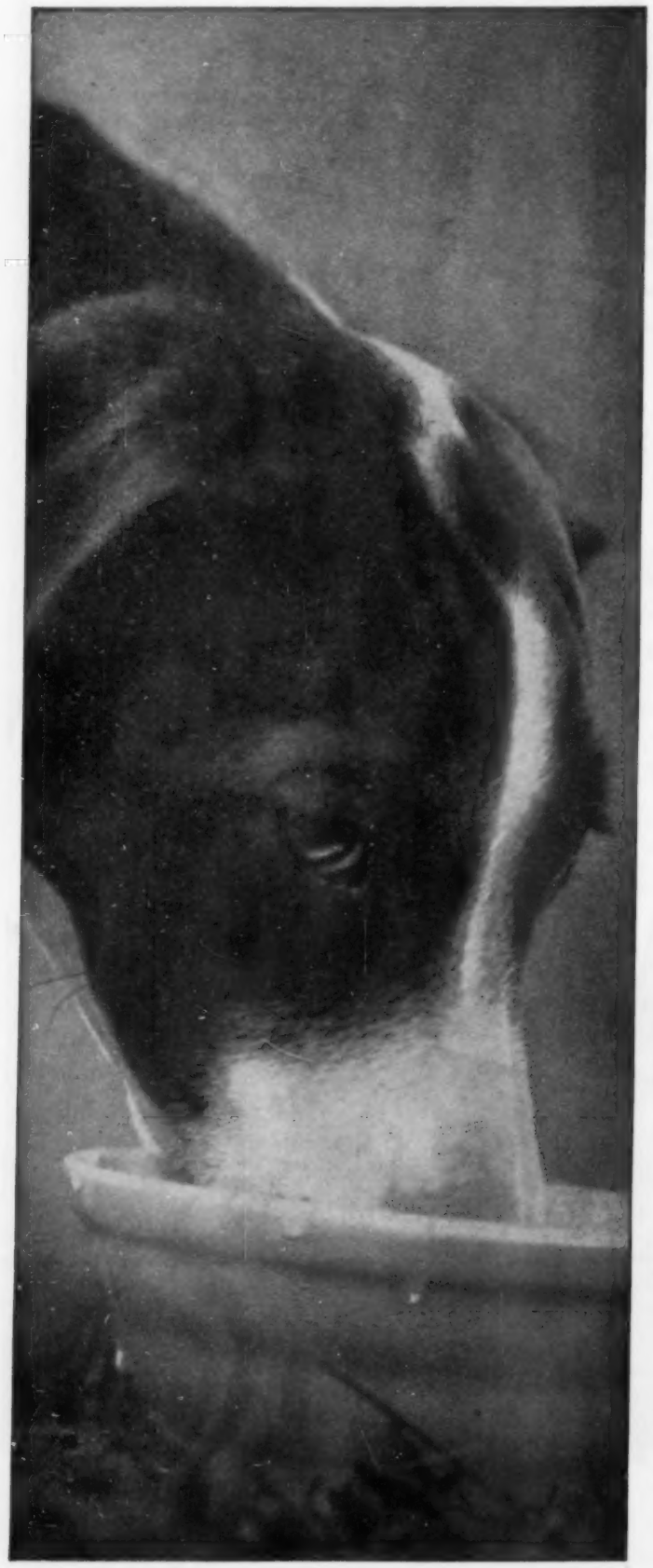
He said that although pelleted and granulated feeds are in common use today, many of the basic reasons for their variable performance remain obscure.

Arthur H. Palmer

**NUTRITION DIRECTOR—Vita + Plus Corp., Madison, Wis., has announced the appointment of Arthur H. Palmer, Chicago, as director of feed nutrition. Mr. Palmer was formerly feed nutritionist for the A. E. Staley Manufacturing Co., and before that was director of feed nutrition and research for Arcady Farms Milling Co. He is a biochemistry graduate of the University of Wisconsin.**

## Chick Group to Meet

NEW BRUNSWICK, N.J. — The Jersey Chick Assn. has announced that its annual meeting and dinner will be held Nov. 5 at the Berkeley-Carteret Hotel, Asbury Park, N.J. The theme of the meeting is "Meeting the Challenge of Change."

*Quick way to improve your mixes . . .*

**G-AN-EN**

*adds vitamins, protein, minerals to balance dog diets . . . plus real nose appeal*

When you add G-AN-EN in a 5% ratio to your mix formulas, you're adding flavor dogs can't resist . . . and extra food values dogs need for sturdy growth.

G-AN-EN is a concentration of all these ingredients in handy dry form: fresh-dried whole whey, dried buttermilk, cheese rinds, brewers dried yeast, vitamin A and vitamin $D_2$ feeding oil (stability-improved), niacin, sulphates of iron, zinc, copper, and manganese chloride.

**ALL THESE EXTRA FOOD ELEMENTS ARE SUPPLIED BY G-AN-EN:**

**6 VITAMINS**—*vitamins A, $D_2$, $B_1$, riboflavin, niacin (the anti-black-tongue factor), and pantothenic acid.*

**6 MINERALS**—*valuable milk minerals, calcium and phosphorus,* plus *the mineral salts of copper, iron, zinc and manganese chloride.*

**MILK PROTEIN**—*The milk protein in G-AN-EN contains all the essential amino acids in the milk proteins lactalbumin and casein.*

You'll find G-AN-EN is quick and easy to blend. It's packed in 50-lb. bags. Start today to improve your mixes this easy way.

**G-AN-EN**
is a Kraft Product

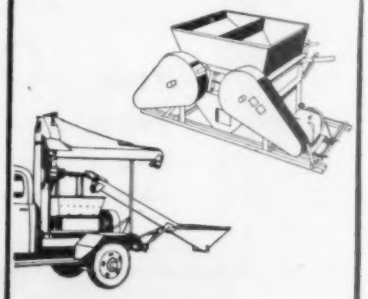
*Order from* KRAFT FOODS
*Division of National Dairy Products*
500 Peshtigo Court
Chicago 90, Illinois



**TRY THE COLUMBUS heavy duty industrial ROLLER MILL AT OUR EXPENSE!**

Endorsed by grain dealers, the Columbus heavy duty Roller Mill will roll all grains. Superior design, sturdy construction for years of profitable service.
Four sizes—300 bushels, 600 bushels, 900 bushels, 1200 bushels per hour, with or without electric motor.

**TWO MODELS:**
**Stationary or truck mounted.**



Operate the mill 10 days. If not satisfied, return it. WE WILL REFUND YOUR MONEY AND PAY RETURN FREIGHT.

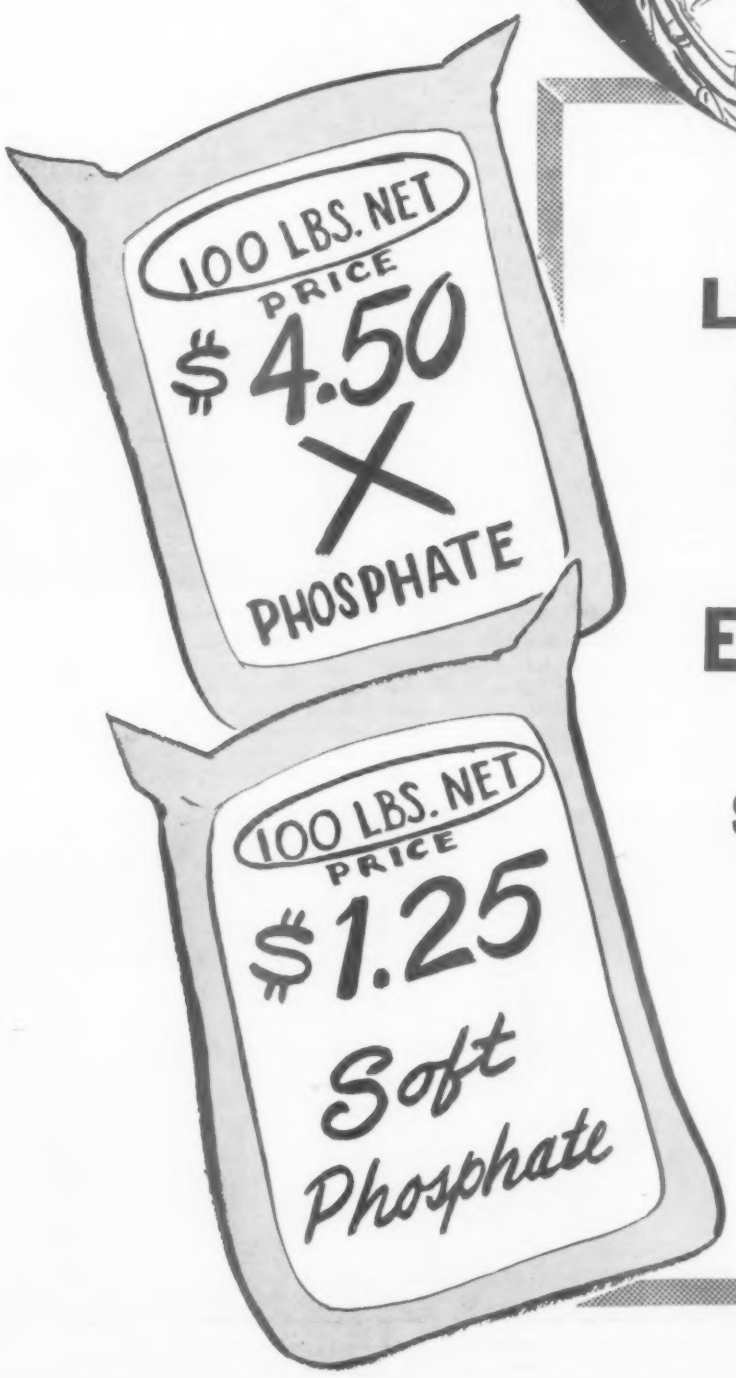
***WRITE FOR PRICES***

**HENKE MANUFACTURING CO.**
**Columbus, Nebraska**

They **BOTH**

get you where

you want to go . . .




**Like the $2,500 Car**

# Soft Phosphate

**Is**

# EFFICIENT-RELIABLE

**And**

**Supplies Your Phosphorus Needs**

**At A**

# Much Lower Cost

EFFECTIVE PHOSPHORUS AT A SENSIBLE PRICE

**Soft Phosphate, inc.** **Box 31, Media, Penna.**

Hoffman

for vitamins

Hoffman-Taff Inc.
SPRINGFIELD, MISSOURI

VAN DUSEN HARRINGTON
DIVISION
F. H. Peavey & Co.

GRAIN SOYBEANS FLAX

Founded 1852

MINNEAPOLIS Pv DULUTH

Pittsburgh Plate Glass Co.
34% LINSEED MEAL
MEAL SALES—424 Flour Exchange Bldg., Minneapolis 15
Telephone FEderal 8-8469
PLANT AT RED WING, MINNESOTA

for
clean, accurately sized
pellets and crumbles

It's the best BAR-NUN

Progressive feed manufacturers find the Model M Bar-Nun Rotary Sifter a factor in getting their share of the growing market for clean, top quality pelleted feeds.

This modern, all-metal sifter accurately and thoroughly separates pellets, crumbles and fines. Big volume in limited space is produced by the Bar-Nun's exclusive combination of complete rotary motion with long sieve flow. Totally enclosed construction assures dust-free operation. And, you'll get years of low cost service from a Model M Bar-Nun. All-mechanical construction, with exclusive four-point supporting and synchronizing drive, gives the Bar-Nun extra durability.

Choose a Model M Bar-Nun Rotary Sifter to complete your pelleting system. Profits grow for the mill selling uniform, quality feeds, produced economically. Ask for details and recommendations on your specific requirements. There's no obligation involved.

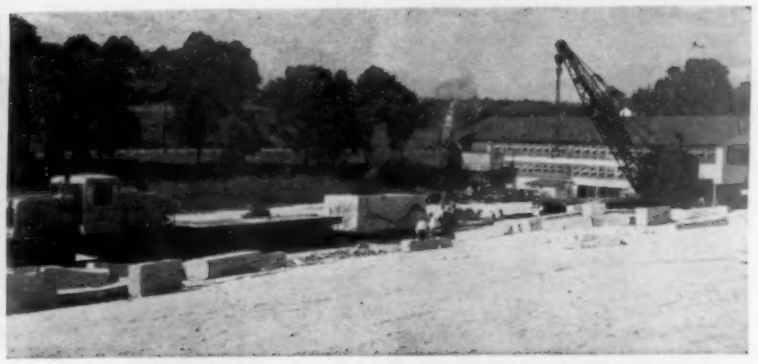
GUMP

FEEDING • MIXING • SIFTING • GRINDING • WEIGHING • PACKING and PACKAGING EQUIPMENT FOR THE MILLING INDUSTRIES

B. F. GUMP CO.

Engineers and Manufacturers since 1872

1310 S. Cicero Avenue . . . . . Chicago 50, Illinois



**BIG BLOCK—Part of the operations of the North Carolina Granite Corp., Mt. Airy, N.C., is shown. A 90-ton block of granite from the world's largest open-face granite quarry is being loaded on a special car for hauling into a cutting shed for carving.**

# Development of Grit for Poultry

## Scientific Information on Granite Grit Feeding Increases

By HENRY S. FRENCH
Feedstuffs Staff

MT. AIRY, N.C.—For many years chickens have been fed grit on a somewhat haphazard basis. It was generally accepted that insoluble grit was necessary in poultry rations, but just how much and in what size no one was certain.

In the last few months, however, greater amounts of research data have become available which give professional opinion on the proper feeding of granite grit. Some of the information seems to usher in the era of scientific feeding of poultry grit.

Responsibility for much of this material is attributed to the planning of three producers of granite grit—the Stone Mountain Grit Co., Lithonia, Ga.; North Carolina Granite Corp., Mt. Airy, N.C., and the Rion Crush Stone Corp., Rion, S.C. Nearly five years ago the three firms organized the Granite Grit Institute of America. The institute was set up to serve as a clearing house for information on grit, to coordinate scientific experiments and to give aid and encouragement to college researchers. Every third year—two have been held so far—a seminar on granite grit is held, and many researchers with information on grit are invited to attend and exchange their data with others.

### Largest Granite Quarry

One of the founders of the institute, the North Carolina firm, recovers granite from the largest open-face granite quarry in the world. From a solid mass of white granite a mile long, one third of a mile wide and so deep it probably goes down to the earth's inner hot core, sheets of granite as much as 10 ft. thick and as large as a football field can be split out.

John P. Frank, president of the company, says that at the present rate of shipping granite (3,500 cars a year) from the location, the deposit will last more than 500 years. Mr. Frank, who has served with the firm since 1927, and became its head in 1945, relates that the first stone was taken from the location in 1888. Close to 85% of the granite from the mine is used for buildings, monuments and curbstones. Cut, carved and polished granite for all purposes is manufactured in the finishing plants. Memorials and buildings us-

John P. Frank V. T. Currier

**EXECUTIVES—John P. Frank (left) and V. T. Currier, president and general manager of the poultry grit department respectively of the North Carolina Granite Corp., are optimistic about the current research being done on feeding grit to poultry.**

**GRANITE PROCESSING—Part of the granite crushing operation of the North Carolina Granite Corp., Mt. Airy, N.C., is shown. The view is looking into a primary crusher hopper which will hold a carload. Granite is fed from the hopper by a feeder into a primary jaw crusher just opposite the man in the picture. After further crushing, the granite is carried up the conveyor belt into the silo for storage and further processing into grit for poultry feed.**

**GRIT FEEDERS—Shown are pullets eating from the self-feeding Gran-I-Grit feeder packs. Gran-I-Grit is a product of the North Carolina Granite Corp., Mt. Airy, one of the three founders of the Granite Grit Institute of America.**

ing Mt. Airy granite have been erected in virtually every state in the Union.

### Grit Feeding Research

Mr. Frank and V. T. Currier, general manager of the poultry grit department, are enthusiastic about the work and implications of the Granite Grit Institute and the experiments being conducted by the individual firms and college researchers.

"It is unusual," says Mr. Frank, "that it should take so long to achieve a scientific approach to grit feeding of poultry, since the grit industry, essentially, is a child of poultry scientists. Around 25 years ago, Dr. O. B. Kent, now deceased, then with the Quaker Oats Co., and Dr. James E. Rice, with Cornell and a co-founder of the Poultry Science Assn., plumped for granite grit and asked for its production. The first car of grit from Mt. Airy was shipped to Security Mills, Knoxville, Tenn., in 1933."

"The Institute," adds Mr. Currier, "has produced a film, suitable for television and showings to groups, which shows the inside workings of a chicken gizzard grinding. Also on the agenda is the standardization of nomenclature, size specifications, screen sizes and other important aspects of industry cooperation."

### Research Results

Most of the experimental work being done with grit now involves the feeding of various sizes at different stages of development of poultry. Results thus far have been encouraging, even though differences of the controls and experimental birds sometimes have been slight. When projected to thousands of broilers or layers, however, savings when granite grit is fed according to recommended specifications are important.

Gurney C. Hodges, broiler producer of Low Gap, N.C., indicated in 1956 the results of a test he made in cooperation with North Carolina Granite Corp. Feeding 4,000 broilers on graduated sizes of grit, and comparing results with the same number of birds without grit, the grit-fed broilers were ahead on feed efficiency. The Gran-I-Grit fed birds produced $125.70 extra profit for Mr. Hodges.

One of the largest feed manufacturers early this year experimented with eight paired pens of broilers with 505 birds per pen. Lots one through eight received no grit, while lots nine through 16 received grit, with the size of the grit graduated to the size of the birds. The grit-fed birds averaged a feed efficiency of 2.26 lb. of feed for each pound of bird, while the non-grit fed birds averaged 2.30 lb. There also is some indication that birds, when fed a small size grit, tend to eat too much of it. This is alleviated by graduation.

More and more, researchers are turning to examine the need for grit when mash feeds are used. There has been a tendency to neglect the feeding of grit as the trend toward feeding mash becomes more pronounced. Dr. M. L. Scott, Cornell University, recently observed that this neglect is not based upon scientific findings.

### Turkeys

Considerable attention also is being paid to turkeys. For the last several weeks the North Carolina firm has been conducting an experiment which compares results of regular sizes of grit fed to a number of turkeys, and this time an extra large size is added to the grit-fed birds. While the experiment still is not ended, early results indicate the need for a larger size grit to be used to finish turkeys than now is normally used.

## Cyanamid Announces Personnel Change

NEW YORK—Karl C. Seeger has replaced Norman E. Walker as field supervisor of American Cyanamid Co.'s Orange Cove poultry experiment farm near Fresno, Cal., it was announced recently by Dr. L. M. Skamser, director of poultry development. The change was effective Sept. 15, 1958. Mr. Walker resigned to work toward a Ph.D. degree at the University of California.

Mr. Seeger moves up from his post as field investigator at the Georgetown (Del.) poultry experimental farm operated by American Cyanamid Co. A graduate of the University of Connecticut, Mr. Seeger was an associate professor of poultry pathology at the University of Delaware and a research assistant at the university's experiment substation in Georgetown, where he was in charge of broiler and turkey research prior to joining Cyanamid in March, 1953.

He is a member of the U.S. Livestock Sanitary Assn. and the Poultry Science Assn.

## North Carolina Feed Tonnage Hiked 36%

RALEIGH, N.C.—A 36% increase in feed tonnage was reported by the North Carolina Department of Agriculture for the month of July, 1958, over the same month of the previous year.

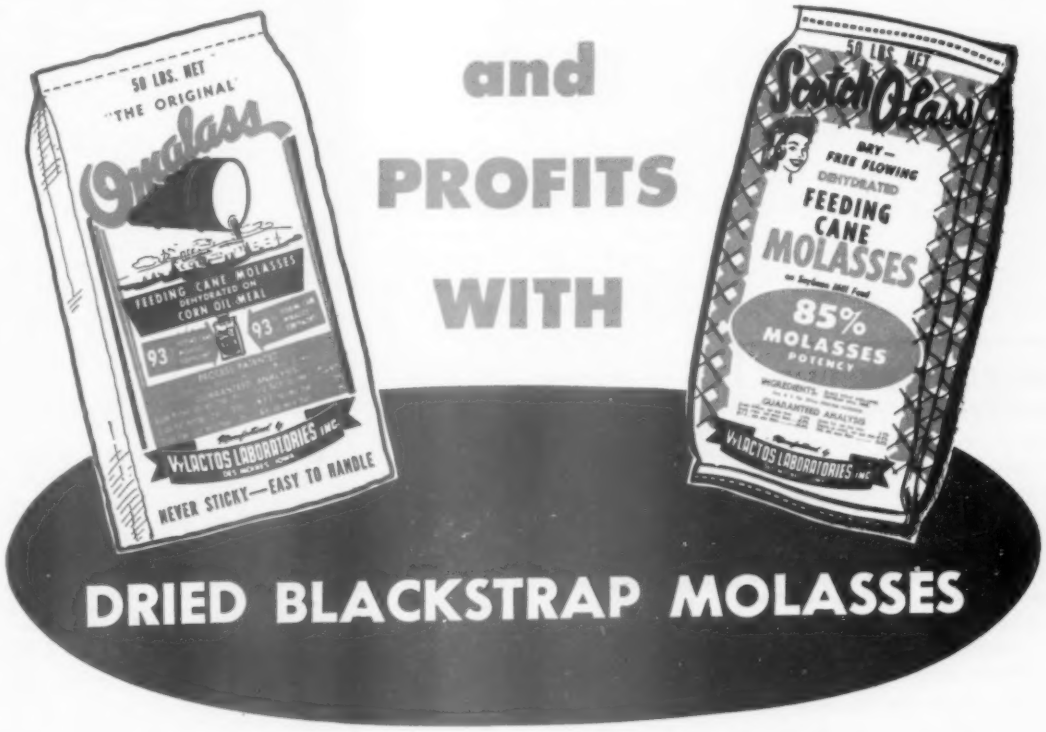
The totals were 138,764 for July of this year, compared with 101,977. The report is the first of the new fiscal year. In the previous fiscal year, the state had a total of 1,370,315 tons, a 14% increase over the 1956-57 fiscal year total of 1,199,350 tons.

### BUYS INTO FEED FIRM

LEBANON, ORE.—A half-interest in the Valley Feed & Seed Co. has been purchased by Charles Cross. Robert Heimerdinger and his mother are holders of the other half-interest.

WILHOIT LABORATORY
Will Protect Your Quality
Complete analysis service on your
FEEDS and FEED INGREDIENTS
Serving the industry since 1915
619 Flour Exchange FE. 3-2994 Minneapolis 15, Minn.

BOOST FALL SALES
and
PROFITS
WITH




DRIED BLACKSTRAP MOLASSES

VY LACTOS 29th ANNIVERSARY CELEBRATION, September 29 thru November 29

Our Anniversary celebration ties in with your Fall Selling Season. Omalass and Scotch O Lass really move through the fall feeding season, and during this time we are offering a terrific premium program to thank you for your cooperation and business.

Just a little push on either Omalass or Scotch O Lass and your sales will really climb. The finest dried molasses product on the market—easy to mix—perfect for bagged or bulk feeds—ideal for top dressing.

It pays to sell Omalass and Scotch O Lass—and during our Anniversary Celebration you get PREMIUMS TOO!

WRITE FOR DETAILS ON PREMIUM OFFER!

Vy Lactos LABORATORIES, INC.
1901 East Euclid Avenue
Des Moines 13, Iowa

Vy LACTOS LABORATORIES, INC.
1901 East Euclid Ave.
Des Moines 13, Iowa
Please send me complete details on Omalass and Scotch O Lass.
Name .....
Company .....
Street .....
City ..... State.....

# ☆ Classified Ads ☆

**Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $10.50 per column inch. All Want Ads cash with order.**

## MACHINERY FOR SALE

**WHIRLAWAY AIRBLAST CAR LOADERS,** cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jeffreson City, Mo.

**FOR SALE—ENCLOSED MOTORS; RICHardson Scales;** truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyers; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

**FEED MIXER, 1-TON CAPACITY, GUAR**anteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

**CHAMPION MOBILE GRINDER AND** Mixer units. Champion Portable Mill Co., 2105 Como Ave., Minneapolis 14, Minn.

**FOR SALE—HAVE KM30 2,000 LB. ELEC**tric Yale Lift truck. Wenger Mixer Manufacturing, Sabetha, Kansas.

**GOOD USED NO. 57 SCHUTTE HAMMER**mill with 30 hammer mill screens. Sabetha Machinery Co., Sabetha, Kansas.

**FOR SALE — NEARLY NEW 3-SCALE** stainless steel openmouth Bemis Bagger and "V" bag conveyor. C. Roy Curtis & Son, Inc., Marion, N. Y.

**ONE MARION UNIT TUMBLER TYPE** bag cleaner with ½ H.P. motor, $80, f.o.b. Hammond, Ind. The M.G.R. Feed Co., Inc., P. O. Box 4006, Hammond, Ind.

**PNEUMATIC "AIR-CONVEYOR" SYSTEMS** —Positive Pressure blowers, new or used. Any size, capacity, distance of product. Nolder Co., Box 14, Corona Del Mar, Cal.

**FOR SALE—DAFFIN MOBILE UNITS (2).** Excellent values. Will finance. Sherwood Feed Mills, Inc., 500 President St., Baltimore 2, Md.

**FOR SALE — FORDS PORTABLE FEED** grinder with mixers. Have two exceptionally good used outfits. H. L. Myers, Route No. 3, Alliance, Ohio; Phone 7209.

**ONE H-6-75 H.P. CUMINS DIESEL EN**gine; one 50 H.P. electric motor; two 12-inch hammer mills. Lehman's Cash Feed Store, Box 206, York Springs, Pa.; Phone 3 R 4.

**SPROUT - WALDRON 7,500-LB. DOUBLE** ribbon blenders; Buhler 5-roll malt mill; Heil 8'6"x25' Ardrier; Anderson 72 tube Rotary drier. Best Equipment Co., 1737 Howard St., Chicago 26, Ill.

**FACTORY REBUILT MOISTURE TESTERS**

**All makes used electric testers. Carefully reconditioned by trained electronic engineers. Each unit carries one-year guarantee. Prices start as low as $100.00. Send for our free 200-page catalog on grain testing and handling equipment and supplies. Burrows Equipment Company, 1316-C Sherman Ave., Evanston, Illinois.**

## MACHINERY FOR SALE

**ONE USED MODEL 3 UX JAY BEE HAM**mermill complete with 40 H.P. motor and starter. Write or call Shafer Feed Mill, Shafer, Minn.

**USED 24" DIAMOND HULLER-ATTRITION** mill complete with two 25 H.P. motors and two 25 H.P. compensator starters. Very good condition. Write or call Robert Terry, Ostrander Farmers Coop Elevator, Ostrander, Minn.; Phone 7605.

**PRICED TO SELL — SEVERAL MAKES** and models of attrition mills. Write or call N. W. Thornberg, Supt. of Construction, Peavey Elevators, 809 Grain Exchange, Minneapolis 15, Minn., for complete description.

**SALE — ALUMINUM TANKS, 7,000 GAL.,** 4,000 gal; spiral ribbon mixers, 336, 200, 75 cu. ft.; dewatering presses, Davenport No. 1A, No. 2A, No. 3A; Louisville 8-roll 36"; six Louisville Rotary Steam Tube Dryers 6'x50', 6'x30', 6'x25'. Perry, 1403 North 6th St., Philadelphia 22, Pa.

**WORTHINGTON 4-CYCLE DIRECT IN**jection diesel engine, 100 H.P., type B4 V0942, needs repair or will sell for repair parts; 15 H.P. size molasses mixer; one 15 H.P., 1,200 speed motor; one 220-volt starter for 15 H.P. motor; one 220 starter for 20 H.P. motor. Four Square Feed Mill, Phone 3192, Winsted, Minn.

**ONE 300-BU. CAMPBELL DRIER, GAS** fired, used two corn seasons, in excellent condition, dimensions 35" high, 7' wide, 19' long; one 200-bu. Campbell drier, oil fired, 5 years old, inspected by manufacturer, all worn parts replaced by new; One 7'x11' steel dump body with cradle hoist in good condition, price $350. Sanders Co., Inc., Greenwich, Ohio; Phone 2631.

**BAUER NO. 182, SERIAL NO. 18492 MILL** complete with dust collector, magnet, screens, on base with 60 H.P. Fairbanks-Morse 3,600 R.P.M. motor, frame RS-405-S, serial No. 572076. Good condition. In operation now. Also have Bauer Attrition Mill complete with two (2) 15 H.P. Wagner motors, type BP, model 17T in operating condition. Equipment priced to move. Phone or write Miami Feed & Grain Co., Sidney, Ohio.

## MACHINERY WANTED

**WANTED—ONE 25-BUSHEL AUTOMATIC** Richardson Receiving Scale. Gurley Milling Co., Selma, N. C.

**WANTED TO BUY — RICHARDSON** scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

**ROTARY DRYER, DIRECT FIRED, 8 FT.** diameter, 30 ft. or longer. Also hammermill, 36 to 48 in. opening, complete with 100 to 150 H.P., 3-phase, 220-volt, 60-cycle, 1,800 R.P.M. motor and starter. Address Ad No. 4066, Feedstuffs, Minneapolis 40, Minn.

**WANTED—IN GOOD CONDITION, ONE** used Sprout-Waldron Ace or California Century pellet mill outfit complete. Also a two-ton double-ribbon horizontal mixer, with or without drive. Interested in good used bucket elevators and 9 and 12" steel screw conveyor. Also 30 or 36" double-head attrition mill. B. Clay Lee Co., Inc., 3 Surrey Lane, Natick, Mass.

## MACHINERY WANTED

**ALL KINDS OF GOOD USED GRAIN** processing machinery. E. H. Beer & Co., Inc., Baltimore 2, Md.

## SITUATIONS WANTED

**FEED MAN WITH WIDE EXPERIENCE** in sales and management, available for mill with local distribution either direct to feeders or dealers. Address Ad No. 4095, Feedstuffs Minneapolis 40, Minn.

**ADVERTISING MANAGER SEEKS POSI**tion in feed industry. Advertising manager of one feed concern; assistant advertising manager of another. Also familiar with dog food advertising. Top references. Address Ad No. 4119, Feedstuffs, Minneapolis 40, Minn.

**EXPERIENCED FEED MAN WANTS SU**pervisory position—17 years' practical experience, 33 years of age, college training in personnel and feed operation, all phases of practical nutrition and livestock management, advertising and sales experience, poultry service experience. Address Ad No. 4107, Feedstuffs, Minneapolis 40, Minn.

## HELP WANTED

**SALESMAN—FOR VITAMINS AND CHEM**icals to feed manufacturers in central and eastern Iowa. Warren-Douglas Chemical Co., Inc., 128 S.E. 26th Street, Des Moines, Iowa; Phone AMherst 2-8207.

**EXCELLENT SIDE-LINE OR FULL TIME** item for salesman selling to feed, grain, farm equipment dealers and farmers. Liberal commissions. Replies will be held confidential. Write Doane Agricultural Service, Inc., St. Louis 3, Mo.

**SALES MANAGER WANTED FOR FEED** manufacturing firm located in eastern Pennsylvania. Excellent opportunity, give full resume and expectations in first correspondence. Address Ad No. 4092, Feedstuffs, Minneapolis 40, Minn.

**FEED SALESMAN WANTED FOR PROVEN** area—central Illinois—we have a man retiring and need a replacement. The territory is well established and company well known. Commission rate excellent—pay is superior—contact us now. Address Ad No. 3934, Feedstuffs, Minneapolis 40, Minn.

**NUTRITIONIST—MUST HAVE AT LEAST** Master's degree with five or more years well rounded feed industry experience. Man under 35 with proven sales ability given preference. Midwest location. Well known brand. Address Ad No. 4062, Feedstuffs, Minneapolis 40, Minn.

**POULTRY NUTRITIONIST—PERMANENT** position with Southern California feed manufacturer. M.S. with 5 years' experience or Ph.D. in lieu of experience. Salary open. Answer in confidence. Address Ad No. 4076, Feedstuffs, Minneapolis 40, Minn.

**SALESMEN FOR LEADING BREEDER—** Due to recent advancements within our company we are seeking two full-time salesmen. Exclusive territory, company car, guaranteed draw, bonus incentive plan, paid training period. Our breeding stock carries a top reputation in the poultry meat industry and is backed by a national sales and distribution program. The men we're looking for must be neat, intelligent, anxious to work and willing to travel. For interview write H. Ted Raymond, Jr., sales manager, Cobb's Pedigreed Chicks, Inc., Concord, Mass.

## HELP WANTED

**ARE YOU A TOP DISTRICT SALES MAN**ager or top supervisor and ready to step up, then it will pay you to contact us for a top position, top salary, home every night, company benefits, etc. Contact at once, Harry Levin, President, Loret Mills, Division Seed-Feed Supply Co., Inc., Chattanooga, Tenn. All replies confidential.

**EDITORIAL OPPORTUNITY — GOOD** opening available for assistant editor on poultry magazine. Prefer individual with some training in agricultural journalism and with liking for layout and production. Experience desirable but not essential. Send us an outline of your qualifications and ask for more information. Address Ad No. 4094, Feedstuffs, Minneapolis 40, Minn.

## BUSINESS OPPORTUNITIES

**ESTABLISHED COAL, FUEL OIL, FEED,** bulk fertilizer plant. Four trucks, buildings and scales. Ideal location. $12,000. Ellis Magnuson, Genoa, Ill.

**FOR QUICK SALE—GRAIN ELEVATOR,** capacity 5,000 bushels. On direct railroad route, Toledo. Nearest competition eight miles. Grinding, feeds, coal, farm supplies. Address Ad No. 4093, Feedstuffs, Minneapolis 40, Minn.

**FULLY EQUIPPED FEED MILL ON** trackage can be leased very reasonable on a percentage or straight lease basis. Will furnish steam and electricity. Nebraska Fertilizer Co., P. O. Box 100, So. Omaha, Neb.

**FLORIDA — RETAIL SEED AND FEED.** Cash and carry. Owner retiring June, 1959. Sell fixtures and equip. and teach business. $5,000. Rent or sell building on terms. Address Ad No. 4070, Feedstuffs, Minneapolis 40, Minn.

**FEED & HATCHERY LOCATED NORTH**east Iowa. Owners retiring. Have fully equipped building for custom grinding and mixing. Nice volume business and increasing each year. Address Ad No. 4113, Feedstuffs, Minneapolis 40, Minn.

**WAREHOUSING FACILITIES — LOCATED** in heavily concentrated poultry and dairy areas of New Jersey. Seeking warehousing or distribution agreement with interested firms. Sales and delivery services available. Address Ad No. 4106, Feedstuffs, Minneapolis 40, Minn.

**FOR SALE—FEED, FLOUR, COAL AND** supply mill, modern equipment, 50,000 bu. storage, automatic elevators and coal silos, railroad sidings. Forced to sell. Price of $75,000 for property and equipment. Loss carry forward situation for tax advantage. Call B. G. Cheney, Miller Realty Co., Ashtabula, Ohio; WY 2-3179.

**When you want to Buy or Sell**
**ELEVATORS or FEED MILLS**
**See or Write Us Your Needs**
**We Have Some Good Ones in**
**OHIO-INDIANA-ILLINOIS**
**MID-WEST BUSINESS EXCHANGE**
Halbert C. Smith Plymouth, Ind.

Read
CAPITAL COMMENT
in
FEEDSTUFFS

# AUCTION SALE

## REVERCOMB FEED STORE

**Alexandria, Licking County, Ohio**

## Oct. 4, 1958

***Sale starts at 1 P. M. of the following equipment:***

- **Three Jay Bee Mills: one 15" direct connected with 40 HP motor on base; one 12" with 50 HP motor direct connected on base, and starter; one used portable.**
- **Two Bauer Mills: Model No. 182 and model No. 152.**
- **One 15" Kelly Duplex Mill with crusher feeder.**
- **One 18" Hughes Mill with screen change.**
- **One 18" Bryant Mill direct connected with 60 HP motor, starter.**
- **One 16" Papec Mill.**
- **One 10-ton truck scale.**
- **Two Triumph Zip No. 100 Shellers.**
- **One John Deere Sheller.**
- **One Anglo-American Molasses Blender with 15 HP motor, pump, and elevator leg.**
- **Two 1-ton Haines Mixers: one with 5 HP motor; one with 7½ HP.**
- **One ¾-ton Haines Mixer with 3 HP motor.**
- **Other items for feed mills will also be offered for sale.**

## WANTED: FEED SPECIALIST

**Available now a high potential sales opportunity with leading manufacturer of feed medication and animal health products in Minnesota, Wisconsin, Iowa, the Dakotas and Nebraska territory.**

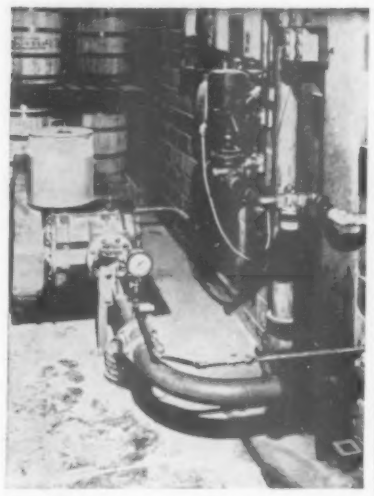
**Man will contact research and management personnel of large feed manufacturers; will assist in training field sales representatives; knowledge of poultry and livestock diseases and poultry service work essential. College background in agriculture desired. Prefer age 30-40. Considerable travel by air, rail and automobile.**

**An average man will not be considered for this position, only a man with top-notch selling records and qualifications. Position offers excellent salary and incentive income, complete fringe benefits program, car and expenses.**

**Send complete resume immediately, including salary requirements, experience and age. Address Ad No. 4109, Feedstuffs, Minneapolis 40, Minn.**

# SALES MANAGER WANTED

For Leading Egg Layer Franchise Organization. A young man with training and experience in selling in the agricultural field to direct field sales program for breeders of one of nation's top egg layer franchise chicks. We want a creative leader who can generate enthusiasm, who can organize and direct a field sales force and get results. A real opportunity in a rapidly expanding organization. Salary and incentive commensurate with abilities and productivity. Write or phone H. R. Irwin, Colonial Poultry Farms, Pleasant Hill, Missouri.



**POSITIVE SYSTEM — The Sprout-Waldron positive pressure pneumatic system for unloading bulk materials at Dr. Salsbury's Laboratories in Charles City, Iowa.**

## Salsbury's Installs Pneumatic System for Ingredient Handling

CHARLES CITY, IOWA — Dr. Salsbury's Laboratories here has recently added a positive pressure bulk unloading system with a negative pressure transfer system.

According to Dr. Salsbury's officials, the major ingredients can now be bought in bulk rather than bags, dust control has been obtained, unloading labor has been eliminated, product transfer has been hastened and product waste has been minimized.

Before the Sprout-Waldron system was installed, the company says, it took three men 10 hours to unload a railroad car full of bagged material.

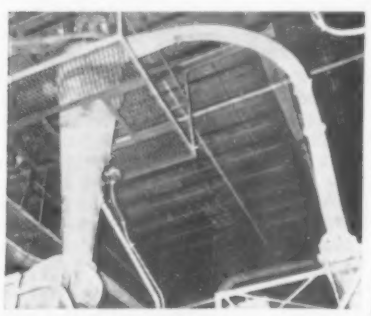
The material now is blown into storage at a rate of 10 tons per hour with one man supervising the operation.

The railroad car is unloaded by gravity into a pit. From the pit, the powdery material is lifted by a 4-in. pneumatic tube which travels up the side of the warehouse over the roof and down into a 14-in. diameter glass-lined storage bin—a distance of about 150 ft.

The dust collector on the roof expels the excess air and returns the product to the storage structure.

The material is then fed from storage to a continuous weighing feeder which automatically weighs a predetermined amount of material and conveys it by belt into an 8-in. negative pressure system. Pneumatic hookup from the bag dumper moves hand dumped material into the same air stream. Again a dust collector vents the excess air to atmosphere and dumps the product dust into a 150-cu.-ft. mixer.

Before going to the mixer, the material drops by gravity to a brush sifter so that lumps may be broken and foreign material removed. After mixing, the product drops into a surge hopper designed to handle 7,000 lb. of material. From there it goes by screw conveyor to a bagging hopper.



**NEGATIVE SYSTEM—The negative pressure pneumatic system takes material from glass-lined storage units and delivers it to the mixer at Dr. Salsbury's Laboratories in Charles City, Iowa.**

HIGHER QUALITY HEAT TREATED **HAMMERS**
Hammers direct from manufacturer of years' experience. Send your specifications or worn hammer. Quantity discounts on hammers and screens. Ask for prices.
SOUTHWEST MILL SUPPLY CO.
P. O. Box 7455 N. Kansas City, Mo.

## Delaware Scientists Report Poultry Research Work

NEWARK, DEL. — Research on certain aspects of poultry management and feeding has been reported recently by the Delaware Agricultural Experiment Station.

One thing currently being studied is floor space for broilers, with a comparison being made of .75 vs. 1 sq. ft. per bird. In the first trial, averages for all birds at eight weeks showed a weight of 2.71 lb. at eight weeks and feed efficiency of 2.21 with 1 sq. ft. of floor space per bird. For birds on .75 sq. ft. of space, average weight was 2.63 lb., and feed efficiency was 2.24. With a price of 18¢ lb., returns over feed and chick costs were somewhat higher for the birds getting 1 sq. ft. of space per bird.

The researchers said they feel the selling price of chickens has a marked influence on return over feed and chick costs between 1 sq. ft. and .75 sq. ft. per chick. With the average weights and feed efficiency of the groups under study, 18.5¢ lb. selling price is the point at which one begins to bring in more return for birds on .75 sq. ft. of floor space. As the selling price increases, the greater the return will be in favor of .75 sq. ft. As the selling price goes lower than 18.5¢ lb., the more the return over feed and chick cost will favor birds on 1 sq. ft.

Other work by Delaware poultry researchers has been on the effectiveness of Aureomycin in the control of infectious synovitis when the antibiotic is combined with terephthalic acid. It was noted that the addition of TPA to feed containing Aureomycin increases its absorption and thus produces higher levels of the antibiotic in the blood and tissues.

The substation division is conducting studies, too, on the effect of various coccidiostats on the growth rate and feed efficiency of broilers. Further work is planned.

## VPI Releases Leaflet For Broiler Producers

BLACKSBURG, VA.—A leaflet designed to answer many questions broiler producers are likely to ask has been prepared by Dr. Arthur T. Ringrose, associate poultry specialist at Virginia Polytechnic Institute.

One of the questions most likely to be asked, he said, was how large a flock should be for top efficiency. In answer, the leaflet states that when broilers are to be one of the major farm enterprises to occupy from one fourth to one half the labor of a full-time man, the minimum size flock should be 10,000 in each of four flocks per year, or a total of 40,000 birds a year. When the broiler enterprise is to be a full-time job for one man, the minimum size would be 30,000 broilers in each of four flocks a year, or 120,000 broilers a year.

As for floor space, Dr. Ringrose says that in general three quarters to one square foot of floor space should be allowed per broiler chick from day-old to market weight. A sound rule for determining floor-space needs is to allow ¼ sq. ft. per pound of broiler to be produced.

Recent tests conducted at VPI by Dr. Paul Siegel, poultry husbandry department, showed that, experimentally at least, floor space needs could be reduced considerably when the environment is carefully controlled. All pens in the test were force-ventilated and under temperature and humidity control. Under these conditions, Dr. Siegel found that floor space needs could be cut about in half.

Dr. Siegel points out that space requirements found in his controlled work do not apply to most commercial broiler houses now in use.

Much progress in housing and environmental control may be expected in the future development of the broiler industry, the scientist said.

The leaflet compiled by Dr. Ringrose, and based on recommendations of the VPI poultry department in collaboration with the Virginia broiler industry representatives, deals in some detail with housing and equipment, management practices and production goals. It is available through county agents and/or the VPI Agricultural Extension Service, Blacksburg. It is known as Circular 800, "Broiler Management."

### FEED COMPANIES MERGE

SUMAS, WASH.—The Sumas Feed & Milling Co. and the Peter Elenbas Co., Sumas and Lynden, have announced a merger. Buildings of the Sumas company have been purchased, and the stock will be transferred to the Elenbas mill. "Cap" Galloway, who has operated the Sumas Feed & Milling Co. at Sumas and a mill in Everson for 20 years, will be associated with the Elenbas company as a field representative.

**William E. Pfeiffer**

**NEW CHIEF ENGINEER—William E. Pfeiffer has been appointed chief engineer to head up the six man engineering section of Rolfes Grain Aeration Companies of Boone, Iowa, George Rolfes, president, announced. A graduate of Iowa State College with an Agricultural Engineering degree, Mr. Pfeiffer was with Martin Steel Products Corp. for five years designing equipment for processing small grains. His experience also includes research, design and engineering on crop drying and aeration systems with Dr. Henry J. Barre, Rolfes consulting engineer.**

Before you build or remodel your **MILL** or **ELEVATOR**
• Milling Plants • Storage • Grain Elevators • Warehouses
FRAME or FIREPROOF CONSTRUCTION
Talk to **HOGENSON** Construction Co.
722 FLOUR EXCHANGE MINNEAPOLIS 15, MINN.

**FOR SALE**
• LIVER MEAL, 65% Protein
• ALL BEEF MEAL, 50% and 55% Protein
Fine Ground—Packed 50's or 100's
**BRUCE MILLING CO.**
229 North James Street
Kansas City 18, Kansas
DRexel 1-7083
*For All Your Animal Protein Needs*

FORTIFIED
**FISH SOLUBLES**
*WITH MINIMUM 25% FISH GLANDULAR AND LIVER HYDROLYSATE ADDED*
+ the Plus Factors
GUARANTEED "ALL YEAR" SUPPLY
*Producers and Brokers* R. S. WILSON CO.
1206 MAPLE AVE. • LOS ANGELES 15, CALIF.

**FARM ANIMAL SCIENTIST**
Large pharmaceutical company near New York City offers a challenging, permanent opportunity to a person with commercial training and experience in the nutrition of large farm animals and with their diseases. He must be able to plan, coordinate and assist in the investigation of new product possibilities and supervise applied research projects. He should be able to contribute to the preparation of brochures and technical papers in the large animal and veterinary fields. He should have a Ph.D. or equivalent varied experience.
Salary commensurate with qualifications. Excellent benefits program. Please submit complete resume of training, experience and salary requirement. Address Ad No. 4067, Feedstuffs, Minneapolis 40, Minn.

## *Future of Egg Production in South Discussed*

DECATUR, ALA. — Approximately 60 guests of Alabama Flour Mills, manufacturer of Red Hat Feeds, gathered in Decatur recently for a look into the future of egg production in the South.

The meeting included talks on the present and future of egg production and a tour of Cedar Creek Demonstration Farm, a cage laying operation with 25,000 hens. It was founded by the company to provide information for persons interested in the egg business.

Included among the guests were bankers, county agents, feed dealers and producers now in the egg business.

Highlighting the session was an address by Prof. D. F. King, head of the poultry husbandry department, Alabama Polytechnic Institute. "The farm flock as a producer of market eggs is fast disappearing," Prof. King said. "Taking its place are large egg manufacturing plants — and in the New South these egg plants will become even larger."

Prof. King gave six reasons for the popularity of giant egg plants: (1) profit per dozen is decreasing under present methods, (2) good management is scarce, (3) markets demand volume (4) large operations make efficient use of labor, (5) the big plants make better use of equipment, and (6) supplies can be purchased wholesale.

"The future of egg production in the South has been determined," he stated. "All that is now required is our support and encouragement to make it grow into full maturity."

E. O. Creel, head of Red Hat's poultry management division, provided a discussion on the operation of the Cedar Creek Farm. Mr. Creel also supervised a tour of the farm.

At the farm the 25,000 hens are housed in five houses 431x130 ft. From records kept of every phase of the operation, visitors were shown information assimilated after one year of production. They were told that during the year a total of six million eggs was produced at Cedar Creek. The eggs were used as a core to build a market service available to farmers under the poultry management division.

The purpose of the meeting was summed up in a statement by Mr. Creel. "At Red Hat," he said, "we feel that it is the responsibility of today's feed manufacturer to supply customers and other interested parties with up-to-date information and experienced guidance in large scale egg operations."

### OPENS FARM STORE

EXETER, CAL.—John C. Kazanjian opened his new garden and farm supply store here recently. The store will handle a variety of packaged feed for the farm.

**NEW PRINTS—Bemis Bro. Bag Co. has announced the introduction of Bemis Designer Prints into its 100-lb. cotton feed bag line. These specially woven cotton fabrics meet the growing demand for a bag material adaptable to fashionable home sewing, yet one that retains the high standards of the feed industry's packaging requirements. Bemis Designer Prints are available in seasonal patterns with present emphasis on fall and winter. Patterns include paisleys, plaids, stripes, checks and florals.**

# WHY Feed Dealers Push Vitality...

## 1. No Cut Throat Competition

Not a loss leader—Staley's Vitality is sold through feed, pet and independent stores. You can get a better than average markup *all the time* on *every bag!*

## 2. EASIER Quantity Discounts

Vitality and Staley's—the only *complete* line (Kibbles, Whole Biscuit, Instant, Granular, Cubes, Homogenized, Meal, and Bites) of nationally advertised dog foods from a single source in *one* shipment. Saves multiple ordering . . . eliminates unbalanced stocks . . . adds up to quantity discounts quicker.

## 3. EASIER To Sell

Vitality is the best known and most respected brand with men who buy dog food in big quantities—kennelmen, breeders, and hunters. National advertising, local and field trial promotions keep Vitality moving. It's the only dog food with "Specialized Diets" to fit the individual needs of each dog—poodle or pointer, hunter or pet. Staley's Vitality fits in with your business as a "feed" man.

**Put the new Vitality Bulk Dog Food Merchandiser to work for you. Drop us a card today.**

A. E. STALEY MFG. CO. / DECATUR, ILLINOIS


## Swine Potential Seen In Maritime Provinces

MONTREAL—There is a big profit potential in swine growing in the Maritime provinces of Canada, according to Arthur C. Parks, economist with the Atlantic Provinces Economic Council.

Mr. Parks said a survey indicated that Maritime farmers should go into more swine production because: (1) Maritime pork prices compare favorably with those in the rest of Canada; (2) quality of Maritime hogs is equal to the best produced in Canada; (3) market facilities are being improved in the Maritimes; (4) the hog industry can increase economic production under existing regional conditions, and (5) the area now consumes twice as much pork as it produces.

He said quality of hogs in the Maritime provinces has been climbing steadily because freight rate assistance has made it possible for them to be fed top-quality western grains, rather than surplus milk, homegrown grains and left-overs not required by other farm animals—once the standard feed items for Maritime hogs.

A report on the survey stated that the proportion of hog carcasses appearing in the two top grades in the Maritime is somewhat higher than in Canada as a whole, and that, in addition, price follows closely the Montreal price. The price differential between the Maritimes and Montreal which prevailed previously, particularly prior to 1940, had disappeared by 1950. Despite this, pork production has been dropping in the Maritimes.

"Since land requirements for a successful and efficient hog enterprise may be modest, since price to the producer is comparable to the price . . . elsewhere in Canada, and since the regional market will accommodate greatly increased output, expansion of the hog industry offers one important avenue to a more prosperout agricultural industry," the survey report concluded.

## ARKANSAS

(Continued from page 4)

tolerated. All rations produced excellent growth.

Tests with chicks showed good tolerance and significant weight gains over the control at 10 and 100 gram levels. In a poultry farm floor test, a response with erythromycin at 2 or 5 grain level was obtained while penicillin was ineffective at 5 grams. For many years penicillin was the principal antibiotic used on this farm.

These studies point to the need to determine when and why antibiotics lose their growth-promoting potential in poultry.

**OLEANDOMYCIN, A NEW ANTIBIOTIC FOR GROWTH PROMOTION OF POULTRY AND LIVESTOCK—Dr. J. H. Hare, Chas. Pfizer & Co., Inc., Terre Haute, Ind.:** Recently there have been reports from some laboratories of a decrease in growth response when antibiotics were fed to poultry. One reason for this could be that, within the period antibiotics have been used in feeds, basic knowledge of nutrition has improved. As a result birds on the control ration have grown faster than they did several years ago and response to antibiotic supplementation therefore has decreased.

Studies at Washington State College have indicated certain new antibiotics stimulate poultry growth to a greater degree than previously thought possible with conventional antibiotics. Oleandomycin has shown such promotion.

Recently it has been observed that levels as low as ½ gram per ton may give optimum results in chicks. In a series of five battery trials, response to penicillin has ranged from -1.5 to 4.0%, whereas response to oleandomycin in the same tests ranged from 1 to 10%. Feed efficiency was not significantly affected. In floor pens, response to oleandomycin ranged from 1 to 7%.

Oleandomycin has been found effective for turkeys at both the University of Maryland and Washington State College.

In swine oleandomycin has brought increases over the controls from 4 to 22%. A combination of Terramycin and oleandomycin at a ratio of 1:8 has given excellent results under controlled feeding conditions. In tests with lambs and steers, growth of the oleandomycin-fed animals was significantly better than that of controls.

Since oleandomycin has been cleared by the Food & Drug Administration, it should soon be available commercially.

**ANTI-COCCIDIALS — Dr. E. H. Peterson, University of Arkansas:** In the chicken, coccidiosis is at least eight separate and distinct diseases, the most important of which are cecal coccidiosis and three types of intestinal coccidiosis.

Anti-coccidials differ in the way they act against these separate species. Nicarbazin and the sulfonamides possess activity against all four; most of the others, including Glycamide, possess good activity only against cecal coccidiosis and one type of intestinal due to Eimeria necatrix. Nicarbazin, however, has certain undesirable characteristics which include a slight growth depression and the adverse effect upon reproductive performance. In seeking to escape these undesirable effects by substituting other anti-coccidials, we must understand that in many instances one of the strongest anti-coccidials is being replaced by one not so strong.

In northwestern Arkansas the shift away from Nicarbazin has been associated with some increase in the incidence of coccidiosis in broilers. Most of the complaints have been with Glycamide, which reflects in a way the extent to which the industry has accepted this drug. The other of the newer anti-coccidials have not been used sufficiently in this area to determine their relative performance.

One of the problems with anti-coccidials has been development of resistance on the part of the coccidial organisms. Resistance over the years has developed to some degree against the sulfonamides and possibly to other drugs as well. With Glycamide, resistance may develop somewhat faster than with other anti-coccidials.

Since Glycamide is widely used in this area, and generally has given good results, the following recommendations are made: (1) Glycamide should be used at the higher recommended use level which is 0.006%. There is much less likelihood of resistance developing. (2) Where outbreaks of cecal coccidiosis have occurred in the presence of Glycamide, the user should shift to some other anti-coccidial.

This does not mean that all the accounts in an operation should shift, only those individual premises where trouble has occurred. Outbreaks have been few so far. We are not in a position at the present time to recommend any specific substitute anti-coccidial where trouble has occurred. Nicarbazin and Polystat are, of course, of proven efficacy, but other anti-coccidials should be subjected also to field test. Flight from one anti-coccidial, however, may or may not solve a problem, for all of the anti-coccidials are subject more or less to development of resistance.

**HYGROMYCIN B AS A POULTRY FEED ADDITIVE—Dr. Don I. Gard, Eli Lilly & Co., Greenfield, Ind.:** The poultry industry suffers a considerable loss due to internal parasites, mainly through morbidity. Much of this loss is caused by Ascaridia galli (roundworm) and Heterakis gallinae (cecal worm).

Various compounds have been used to attempt control of internal parasites by therapeutic treatment. Although prophylactic treatment is the ideal approach, no compounds have proved effective until the past few years.

The efficacy of hygromycin B as a poultry anthelmintic has been demonstrated. Prevention of infection by roundworms and cecal worms was demonstrated in a replicated experiment when six-week-old worm-free birds were placed on contaminated litter and fed Hygromix TM equivalent to 8 million units of hygromycin B per ton of complete feed. Results indicated very few Ascaridia and no Hetarakis after 31 days, whereas the nontreated birds were infected with both worm parasites.

In a second experiment, a flock of 750 18-month-old Leghorn hens naturally infected with roundworms and cecal worms was fed 0, 4, 6, 8, and 10 million units of hygromycin B per ton. Non-treated birds exhibited continuous infection. A decrease in the worm count of treated birds showed a time-dosage response.

Hygromycin B at four million units per ton of complete feed had no effect on growth or feed efficiency when fed to non-parasitized birds under ideal management conditions.

**INFLUENCE OF FEED ON PIGMENTATION OF POULTRY AND EGGS—Dr. J. C. Fritz, Dawe's Laboratories, Inc., Chicago:** Broiler strain chicks were raised to six weeks of age on a low pigment diet. Materials to be tested were then added and shank color measured after a four-week test period. A wide variety of feedstuffs was examined, but the only materials which produced much pigmentation were green leafy materials, yellow corn, corn gluten meal, paprika and some varieties of peppers.

Alfalfa leaf meal was much superior to regular alfalfa meal. Dried stinging nettles and Koa haole meal were effective pigmenters. The data suggest that only the single carotenoid xanthophyll (lutein) was responsible for most of the color of shanks, skin and body fat.

Broiler pigmentation judged to be normal was produced by feeding about 10 mg. xanthophyll per pound of diet. Maximum color obtainable required at least 25 mg.

None of the food colors and biological strains tested had much effect upon shank and skin color.

Many materials which are inactive for broiler pigmentation may be deposited in the egg yolk.

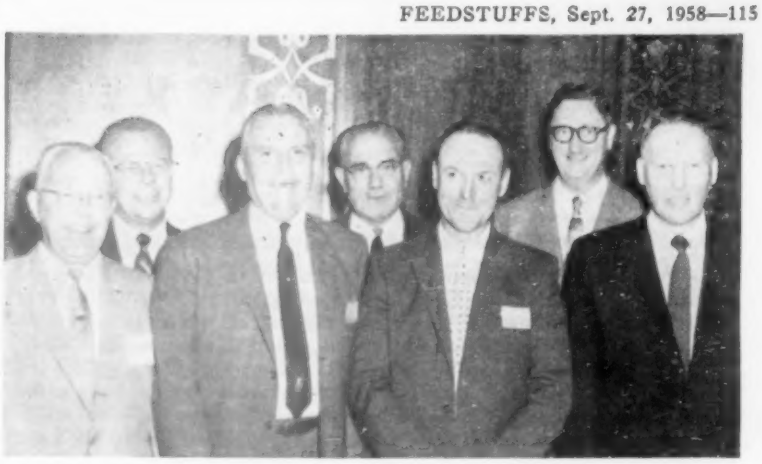
**GROWING OUT THE BREEDING OR LAYING FLOCKS—Dr. E. L. Stephenson, University of Arkansas:** Numerous feeding programs for growing out breeding or laying flocks have been devised with the result that there is considerable confusion. Some breeders have insisted that their particular strain of birds require special handling and treatment but the papers published on this subject generally show that one strain of birds is affected in the same manner as another strain when the two are subjected to the same variables.

Connecticut and Texas A&M workers have investigated the effects of limited vs. ad libitum feeding of high vs. low energy diets. Connecticut workers used diets which contained 857 and 1014 calories per pound of feed. They found that the ad lib feeding of the high energy feed increased body weight and laying house mortality. Egg production was maintained on a hen-day basis but not on the hen-housed basis. Controlled feeding of the high energy diet or ad lib feeding of the low energy diet reduced mortality in the laying house and egg production was satisfactory.

At the University of Arkansas we have in general adopted the philosophy of the Texas workers in that we use a "self-restricting" type of formula for growing out the breeding or laying flocks. Our formulas have ranged from 700 to 780 calories of productive energy per pound of feed. In order to accomplish this we have used relatively large quantities of wheat bran, rice bran, and pulverized oats. We have conducted no experiments using rice hulls, oats hulls, or other similar materials, therefore, are not in a position to comment on this type of material.

Although we have no experiments comparing the "self-restrictive" type of diets with limited feeding of higher energy diets, we have tended to favor the former; especially since it tends to limit the human error in feeding. If care is given to selection of the lower energy materials one can usually formulate a feed which will be more economical to use than the higher energy formula, especially if the additional cost of labor in use of the higher energy formula is considered.

(Other conference talks will be reviewed in Feedstuffs later.)



**INGREDIENTS ASSOCIATION OFFICERS—Officers of the National Feed Ingredients Assn. are shown here as they gathered at the association's first annual meeting in Chicago last week. Left to right are: C. S. Langen, Moorman Manufacturing Co., Quincy, Ill., vice president; Harold Swanson, Nopco Chemical Co., Harrison, N.J., vice president; John K. Westberg, International Minerals & Chemical Corp., Skokie, Ill., new president; W. P. Mann, Merchants Chemical Co., Omaha, vice president; J. J. O'Connor, Walnut Grove Products Co., Atlantic, Iowa, retiring president; William A. Powers, Puritan Laboratories, Des Moines, treasurer; Peter W. Janss, Des Moines, executive secretary.**

## Arkansas Association Elects Harold Snyder To Serve as President

FAYETTEVILLE, ARK. — Harold Snyder, Arkansas Valley Feed Mills, Inc., Dardenelle, is the new president of the Arkansas Feed Manufacturers Assn. He was elected to succeed Ted Darragh, Darragh Co., Little Rock, at a meeting of the association just before the start of the Arkansas Formula Feed Conference held here Sept. 18-19.

Haney Cochran, H. K. Cochran Co., Little Rock, was elected vice president, and J. W. Cobb, Cameron Feed Mills, North Little Rock, was elected secretary-treasurer.

Elected to the board of directors were the following: Ted Darragh; James M. Dunaway, Thibault Milling Co., Little Rock; Collier Wenderoth, Jr., O.K. Feed Mills, Inc., Fort Smith; Kirk Hale, Peterson Produce Co., Decatur, and Dick Kendrick, Tysons Feed & Hatchery Co., Springdale.

The association voted to continue its programs for financing the trips of state champion 4-H and Future Farmers of America and the University of Arkansas judging teams to national contests. In addition, it was voted to finance a trip to the National Association of County Agents convention for the county agents in Arkansas who win distinguished service awards.

Since Arkansas does not have a state commissioner of agriculture, a committee was set up to look into the possibility of coordinating all state agricultural programs under one nonpolitical department.

The feed manufacturers also pledged their support in helping to organize a Farmer & Rancher Club of Arkansas. This club will attempt to educate the people as to the importance of agricultural pursuits to the economy of the state. One of its first activities will be an Agriculture-Business Day Nov. 12 in Little Rock.

## Dow Offers Potassium Iodide in Feed Line

MIDLAND, MICH. — The Dow Chemical Co., Midland, has announced the addition of potassium iodide U.S.P. crystals to its line of products sold primarily to the feed trade. The crystals are used as a source of iodine in animal feeds, mineral mixes and in the production of iodized salt and salt blocks.

The announcement said Dow has been a major producer of iodine for 25 years. In addition to feed uses, potassium iodide is used in medicinal compounds, photoengraving and photographic film processes and in analytical reagents and catalysts.

# THE FEED MARKETS

★ ★ ★ ★

## Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

### A AND D FEEDING OIL

**New York:** Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢; f.o.b. Massachusetts, New York or Pennsylvania.

**Boston:** Demand light; supply good; 400 D, 3,000 A 20¢ lb.; 300 D, 3,000 A 19½¢; 300 D, 1,500 A 16½¢; 300 D, 2,250 A 18¢; 600 D, 1,500 A 17½¢; 300 D, 750 A 14⅝¢; 75 D, 750 A 14½¢.

**Chicago:** Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7@8¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

**Minneapolis:** 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

### ALFALFA MEAL

**Philadelphia:** Demand slow; supply fair; 17% dehydrated $54.

**Ft. Worth:** Demand improved; supply sufficient; 17% protein dehydrated $48, delivered Ft. Worth area, truck; Kansas dehydrated, 17%, 100,000 A $51, rail; suncured No. 1 13% protein ¼-in. grind, truck $39.

**Omaha:** Demand good; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $37; sacked meal $40, Omaha basis.

**New Orleans:** Demand fair; trend steady; supply adequate; $49@50; pellets $46@47.

**Portland:** Demand good; supply ample; trend unchanged; 15% suncured $39; dehydrated $67.

**Boston:** Demand fair; supply adequate; dehydrated, 17% $53@55; suncured, 13% $53.

**Kansas City:** Demand good; trend steady to stronger; supply dwindling as hay crop thins out, likely that hay crop will be exhausted well before frost time, offerings of high grade material are very thin; dehydrated alfalfa meal with 17% protein and 100,000 units A, unprocessed meal $40, sacked; reground pellets $42, sacked; reground and oiled $44, sacked; pellets $37, bulk; 15% protein, 125,000 A meal $46, sacked; suncured meal demand is slow and trading light; market unchanged; No. 1 fine ground $33.50@34, No. 1 ¼-in. $31.50@32, No. 2 ¼-in. $29@30, sacked.

**Seattle:** Demand fair; trend steady; supply good; 15% protein suncured $43, delivered, truck loads; 136,000 A unit dehydrated $69, delivered, truck loads.

**Memphis:** Demand fair; trend higher; supply scarce; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $45.

**Chicago:** Demand fair; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $49.50@50; 13% No. 1 fine ground $39.

**St. Louis:** Demand slow; trend steady; supply ample; 13% fine suncured $38.50; dehydrated, 17%, 100,000 A $42.

**Cincinnati:** Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $50.60@55.60.

**Los Angeles:** Demand fair; trend steady; supply ample; dehydrated meal, 17% protein, 100,000 A $50; dehydrated pellet meal, 17% protein, 100,000 A $52; suncured crumbles, 15% protein $45@47; suncured meal, 15% protein $42@45.

**Minneapolis:** Very firm trend; demand is strong for the good quality produced recently and supplies are light; oiled, reground 17% pellets, 100,000 units A $47, bulk; reground pellets $45, bulk; $4 more for sacks.

**Buffalo:** Demand poor; trend higher; supply fair; $59, Boston.

### ANIMAL FAT (STABILIZED)

**Louisville:** Demand fair; trend steady; supply reasonable; bleachable fancy 7¾¢ lb.; white tallow 8¼¢ lb.; yellow grease 6¼¢ lb.

**Ft. Worth:** Demand fair; supply adequate; prime tallow, tank cars 7¾¢ lb.; drums 9¼¢ lb., f.o.b. north Texas packing plants with returnable drums.

**New Orleans:** Demand slow; trend steady; supply adequate; 8@8¼¢ lb., tank cars.

**Kansas City:** Demand fair; trend steady; supply adequate; prime bleachable tallow 7¾¢ lb., tank car.

**Chicago:** Demand fair; supply adequate; bleachable fancy tallow, tank truck or carlots 7¾¢ lb.; yellow grease 7¢ lb.

**San Francisco:** Demand fair; supply ample; bleachable fancy 8⅛¢ lb.; yellow grease 6⅞¢ lb.

### BARLEY FEED

**Philadelphia:** Demand slow; supply fair; pulverized $44.50.

**Ogden:** Supply normal; rolled $43@48; whole $37@42.

**New Orleans:** Demand slow; trend unchanged; supply light; $58@59.

**San Francisco:** Demand fair; supply ample; rolled $59; ground $58.

**Portland:** Demand good; supply ample; trend unchanged; rolled $60; cleaned $58.

**Baltimore:** Demand quiet; supply adequate; $44.50.

**Chicago:** Demand quiet; supply adequate; $34.

**Los Angeles:** Demand fair; trend steady; supply ample; standard rolled $3.05 cwt., sacked; standard ground $3.05 cwt., sacked.

**Seattle:** Demand and supply good; trend firm; $49, bulk, delivered truck lots.

**Boston:** Demand slow; supply adequate; $45.50.

**Milwaukee:** Demand good; supply fair; needles 95¢@$1.07 cwt.; ground screenings $24.

### BENTONITE (SODIUM)

**Cincinnati:** Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 30 granular $31.50; 200 mesh fine $31.

**Chicago:** Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 30 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots; 30 granular $13.50 net; 200 mesh fine $13.25 net.

### BLOOD FLOUR

**Louisville:** Demand fair; trend steady; supply good; $105@110.

### BLOOD MEAL

**Portland:** Demand good; supply ample; trend unchanged; $120.

**San Francisco:** Demand good; supply tight; $7.25 a unit of ammonia.

**Ogden:** Supply normal; $115 in 100-lb. bags.

**New Orleans:** Demand good; trend steady; supply light; $120@125.

**Louisville:** Demand fair; trend steady; supply ample; $105@110.

**Chicago:** Demand and supply fair; $140, guaranteed 80% protein.

**Los Angeles:** Demand slow; trend steady; supply light; $7.75 a unit of ammonia.

### BONE MEAL (STEAMED)

**Ft. Worth:** Demand fair; supply light; $85.

**New Orleans:** Demand fair; trend unchanged; supply normal; $82@87.

**San Francisco:** Demand good; supply ample; $75.

**Louisville:** Demand slow; trend stronger; supply light; $90@95.

**Portland:** Demand good; supply ample; trend unchanged; $95.

**Boston:** Demand and supply steady; $90.

**Los Angeles:** Demand and trend steady; supply adequate; imported $73.50 in 20-ton lots.

**Chicago:** Demand and supply fair; $75.

**Seattle:** Demand steady; trend firm; supply good; $85, ex-dock, truck lots.

**Cincinnati:** Demand good; trend steady; supply fair; $90.

**Buffalo:** Demand good; trend steady; supply ample; $90.

### BREWERS DRIED GRAINS

**New Orleans:** Demand good; trend steady; supply ample; 26% $51.50@53.

**Ft. Worth:** Demand fair; supply moderate; 26% $52.40 September, $54.40 October, delivered Ft. Worth.

**San Francisco:** Demand fair; supply ample; $54.

**Louisville:** Demand good; trend stronger; supply ample; $53.

**Philadelphia:** Demand and supply fair; $58.

**Boston:** Demand steady; supply ample; domestic 26% $55.50; Canadian 22% $56.

**Chicago:** Demand fair; supply adequate; 26% $45@47.50.

**St. Louis:** Demand slow; trend steady; supply ample; $46.

**Milwaukee:** Demand good; supply fair; $47.50.

**Cincinnati:** Demand poor; trend steady; supply adequate; $53.

**Los Angeles:** Demand steady; trend unchanged; supply not too plentiful; $49 bulk, $53 sacked.

**Buffalo:** Demand and supply fair; trend steady to higher; $49.50, bulk, Boston.

### BREWERS DRIED YEAST

**Portland:** Demand good; supply ample; trend unchanged; 8½¢ lb.

**San Francisco:** Demand fair; supply good; 10¢ lb.

**Louisville:** Demand fair; trend steady; supply good; 10@10½ lb.

**Omaha:** 10½¢ lb.

**Seattle:** Demand slow; trend steady; supply ample; $12 cwt.

**Los Angeles:** Demand and trend steady; supply limited; 10½¢ lb. in 5-ton lots; 11¢ lb. in less than 5-ton lots.

**Chicago:** Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

**Boston:** Demand and supply steady; 10¢ lb.

**Buffalo:** Demand good; trend firmer; supply limited; $9.85 cwt.

**Chicago:** Demand good; supply limited; 10@11½¢ lb. in carlots; 10½@12½¢ lb., l.c.l.

**St. Louis:** Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

**Cincinnati:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**Pittsburgh:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**New Orleans:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

**New York:** Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

**Milwaukee:** Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

### BUTTERMILK-CONDENSED

**San Francisco:** Demand fair; supply good; $5 cwt.

**Ogden:** Supply average; $4.40, 100-lb. drum.

**Philadelphia:** Demand slow; supply light; $4.25 cwt.

**Wichita:** Demand good; supply insufficient; $2.85 cwt.

**New Orleans:** Demand slow; trend steady; supply normal; $4.25@4.50 cwt.

**Louisville:** Demand dull; trend steady; supply light; $4.25 cwt.

**Los Angeles:** Demand fair; trend steady; supply ample; 5⅛¢ lb. in 100-lb. lots; 4⅛¢ lb. in 500-lb. lots.

**Boston:** Demand slow; supply light; 3½¢ lb.

**Chicago:** Demand light; supply adequate; $3.25@3.50 cwt. in carlots.

### CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

**New York:** Crystals $15.28, flour $10.28.
**Buffalo:** Crystals $16.11, flour $11.11.
**Toledo:** Crystals $17.96, flour $12.96.
**Boston:** Crystals $16.63, flour $11.63.
**Limecrest, N.J.:** Crystals $10.50, flour $5.50.

### CALCIUM CARBONATE

**Chicago:** Demand steady; supply adequate; fine grind, plain $9.54, 100-lb. bags; bulk, in hopper cars, fine grind $7.54; bulk in boxcars $8.04; granular grind $1 premium.

**Seattle:** Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

**Los Angeles:** Demand good; trend steady; supply ample; $10.25.

**Cincinnati:** Demand fair; trend steady; supply adequate; $8@9 cwt.

**Minneapolis:** Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

### CHARCOAL

**San Francisco:** Demand steady; supply ample; $141.

**Los Angeles:** Demand steady; supply ample; trend unchanged; hardwood poultry $156 sacked in less than ton lots; $144.50 sacked in ton lots.

**Boston:** Demand and supply light; $100.

**Chicago:** Demand quiet; supply adequate; poultry charcoal $106 in 50-lb. multiwalls.

### COCONUT OIL MEAL

**San Francisco:** Demand fair; supply amsolvent $68.50; cake $73.50.

**Portland:** Demand good; supply limited; trend firm; $75.

**Seattle:** Demand good; trend strong; none available; no quotations.

**Los Angeles:** Demand slower; trend unchanged; supply adequate; copra cake $73@74.

### COD LIVER OIL (FORTIFIED)

**New York:** Trend steady; price per lb in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 18½@20¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 17½@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

**Boston:** Demand fair; supply good; 600 D, 2,250 A 19¢ lb.; 300 D, 3,000 A 20½¢ lb.; 300 D, 2,250 A 18½¢ lb.; 600 D, 1,500 A 18¢ lb.; 300 D, 1,500 A 15¢ lb.

### CONDENSED FISH SOLUBLES

**New Orleans:** Demand light; trend steady; supply limited; 50% solid $91@94, f.o.b. Gulf.

**New York:** Demand and supply fair; trend steady; 4⅝@5¢ lb., f.o.b. eastern shore.

**Los Angeles:** Demand steady; trend easier; supply ample; 5¢ lb.

**Boston:** Demand good; supply short; 5¢ lb.

### CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

**Minneapolis:** Feed $49.80, meal $88.80.
**Atlanta:** Feed $55.98, meal $94.98.
**Birmingham:** Feed $54.64, meal $93.64.
**Boston:** Feed $54.84, meal $93.84.
**Chicago:** Feed $43, meal $82.
**Cleveland:** Feed $51.14, meal $90.14.
**Denver:** Feed $53.51, meal $92.51.
**Ft. Worth:** Feed $51.96, meal $90.96.
**Indianapolis:** Feed $48.36, meal $87.36.
**Kansas City:** Feed $43, meal $82.
**Louisville:** Feed $50.21, meal $89.21.
**New Orleans:** Feed $53.20, meal $92.20.
**New York:** Feed $54.43, meal $93.43.
**Norfolk:** Feed $53.71, meal $92.71.
**Philadelphia:** Feed $54.02, meal $93.02.
**Pittsburgh:** Feed $51.96, meal $90.96.
**St. Louis:** Feed $43, meal $82.

### CORN OIL MEAL

**Louisville:** Demand slow; trend steady; supply ample; $52.45.

**Cincinnati:** Demand fair; trend steady; supply adequate; $51.

### COTTONSEED OIL MEAL

**Omaha:** Demand fair; supply ample; 41% solvent $59.20, bulk, Omaha basis.

**Wichita:** Demand slow; supply ample; 41% old process $63.

**Ft. Worth:** Demand poor; supply adequate; carlots, 41% old process $57@58; solvent $57@58; pellets $2 additional; cottonseed hulls $16.

**Ogden:** Supply average; 41% $63@68.

**San Francisco:** Demand good; supply ample; expeller $61.90; 41% solvent $64.70.

**New Orleans:** Demand slow; trend weaker; supply ample; $76@77.

**Philadelphia:** Demand slow; supply fair; trend unsettled; $71.

**Portland:** Demand good; supply ample; trend unchanged; $67.

**Louisville:** Demand fair; trend weak; supply ample; new crop meal easing price; old process $64.20, off $3; new process $63.20, off $2.

**Kansas City:** Demand slow; trend steady; supply adequate; old process $54@54.50, sacked, Memphis, for October-November-December; solvent $63 sacked, delivered Kansas City coming from Texas.

**Seattle:** Demand fair; trend easy; supply good; $73, delivered, truck lots, 41% expeller process.

**Memphis:** Demand good; trend strong; supply nil; prime 41% protein, old process $62.50, sacked; new process, 41% solvent $60 nominal, sacked.

**St. Louis:** Demand fair; trend steady; supply adequate; $64.50.

**Chicago:** Demand and supply fair; hydraulic $53.50; solvent $53, basis Memphis.

**Boston:** Demand slow; supply ample; $71.80.

**Cincinnati:** Demand poor; trend steady to easier; supply adequate; old process $65.

**Los Angeles:** Demand especially good for solvent; trend steady; supply tight on domestic production; new crop Mexican expeller meal $52@53; no new crop California offers yet; domestic solvent meal $64@65.

**Atlanta:** Demand good; trend strong; supply limited; 41% $65.

**Buffalo:** Demand poor; trend steady; supply adequate; $72, Boston.

### CURACAO PHOSPHATE

**New York:** Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

### D ACTIVATED ANIMAL STEROL, POWDERED

**New York:** Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

**Kansas City:** Demand fair; trend steady; supply ample; 1,500 ICU 9½@10¢ lb.; 3,000 ICU 11½@12¢ lb., in ton lots or larger.

**Cincinnati:** Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

### D ACTIVATED PLANT STEROL, POWDERED

**Chicago:** Demand good; supply adequate; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

### DEFLUORINATED PHOSPHATE

**Tupelo, Miss.:** Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

**Wales, Tenn.:** Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

**Houston:** Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

**Coronet, Fla.:** Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

**Cincinnati:** 18% phosphorus $81, sacked; 13% phosphorus $64.98, sacked, f.o.b. Cincinnati.

### DICALCIUM PHOSPHATE

**Texas City, Texas:** 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

**Columbia, Tenn.:** Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

**Chicago:** Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more, $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

**Bonnie, Fla.:** Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

**Minneapolis:** 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

**Trenton, Mich.:** Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

**Cincinnati:** 18½% phosphorus $92@93.

**Portland:** Demand good; supply ample; trend unchanged; $115.

### DISTILLERS DRIED GRAINS

**Philadelphia:** Demand slow; trend unsettled; supply very light; lights $63.50, darks $66.50, both nominal.

**Louisville:** Demand fair; trend easy; supply ample; production increasing as more distillers start fall operation; bourbon: light $57, dark $59, solubles $77; grains down $2, solubles unchanged.

**San Francisco:** Demand fair; supply ample; solubles $85.

**Seattle:** Demand good; trend firm; supply limited; $65, delivered, truck lots.

**Boston:** Demand fair; supply improved; Canadian medium $65; domestic, dark $63, light $62, the latter two in bulk.

**Cincinnati:** Demand poor; trend steady; supply adequate; by truck $59.

**Buffalo:** Demand fair; trend steady; supply adequate; $63, bulk, Boston.

### DRIED BEET PULP

**New Orleans:** Demand fair; trend steady; supply sufficient; $62@64.50.

**Ft. Worth:** Demand fair; supply sufficient; carlots, 50-lb. papers, molasses $58.30; new crop O-N-D plain or molasses $58, delivered Ft. Worth.

**Ogden:** Supply average; $38@42.

**Portland:** Demand good; supply limited; trend unchanged; $50.

**Milwaukee:** Demand good; supply fair; molasses $57; plain $60.

**Seattle:** Demand slow; trend steady; supply good; $45, delivered, carlots.

**Boston:** Demand slow; supply ample; Canadian $56, spot shipment.

**Los Angeles:** Demand and trend steady; supply adequate; molasses $48.25@50.

**Buffalo:** Demand fair; trend steady; supply adequate; $56, Boston.

**Atlanta:** Demand fair; trend steady; supply ample; $63.10.

**San Francisco:** Demand good; supply fair; $46.40.

### DRIED BUTTERMILK

**New Orleans:** Demand slow; trend steady; supply ample; $9.75@10.25 cwt.

**San Francisco:** Demand fair; supply ample; 11¢ lb.

**Ogden:** Supply normal; $7.25, 100-lb. bag.

**Louisville:** Demand fair; trend steady; supply ample; 11@11½¢ lb.

**Boston:** Demand good; supply tight; 11¢ lb., nominal.

**Milwaukee:** Demand and supply fair; $10 cwt.

**Chicago:** Demand and supply fair; medium acid $9.75@10; sweet cream $10@10.25 cwt. in carlots.

**Los Angeles:** Demand and trend steady; supply limited; 11¢ lb.

**Buffalo:** Demand good; trend firmer; supply very limited; $11.25 cwt.

### DRIED CITRUS PULP

**San Francisco:** Demand good; supply fair; meal $52.

**New Orleans:** Demand good; trend steady; supply adequate; $51.50@55.50, f.o.b. Florida.

**Boston:** Demand slow; supply ample; $48.50, f.o.b. point of shipment.

**Los Angeles:** Demand and trend steady; supply light; orange pulp: $41 bulk, $46 sacked; lemon pulp: $39 bulk, $44 sacked.

**Atlanta:** Demand good; trend steady; supply limited; $56.50; meal $51.50.

### DRIED SKIM MILK

**Philadelphia:** Demand slow; supply light; $12.50 cwt.

**San Francisco:** Demand and supply fair; 13½¢ lb.

**Louisville:** Demand slow; trend steady; supply light; 11@12¢ lb.

**Portland:** Demand good; supply ample; trend unchanged; 13¢ lb.

**Ogden:** Supply average; $15.15, 100-lb. drum.

**New Orleans:** Demand slow; trend steady; supply normal; $11.50@12 cwt.

**Los Angeles:** Demand fair; trend steady; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.

**Milwaukee:** Demand and supply fair; $11 cwt.

**Chicago:** Demand good; supply light; $10.75@11 cwt. in carlots.

**Boston:** Demand and supply fair; 12¢ lb. in ton lots.

**Cincinnati:** Demand fair; trend steady; supply adequate; 10¾@10¾¢ lb.

**Buffalo:** Demand good; trend steady; supply ample; spray $10.65 cwt.; roller $11.50 cwt.

**Minneapolis:** Steady trend; good demand; adequate supply; $10.75@11 cwt.

### DRIED WHEY

**Portland:** Demand good; supply ample; trend unchanged; $6.05 cwt.

**San Francisco:** Demand steady; supply good; $5.50 cwt.

**Ogden:** Supply normal; $6.90, 100-lb. bag.

**Philadelphia:** Demand slow; supply light; $6.25 cwt.

**Ft. Worth:** Demand fair; supply adequate; carlots, standard $5.75 cwt., September, $6 October, delivered Ft. Worth or any Texas point; $5.85 September, $6.10 October, ton lots, f.o.b. warehouse, Ft. Worth.

**New Orleans:** Demand fair; trend steady; supply adequate; $5.25@5.50 cwt.

**Louisville:** Demand fair; trend steady; supply normal; 6@6½¢ lb.

**Seattle:** Demand steady; trend firm; supply good; $6.40 cwt., ex-warehouse, l.c.l.

**Boston:** Demand steady; supply plentiful; $5.75 cwt. for ton lots.

**Kansas City:** Demand good; trend steady after 25¢ rise; supply adequate; $5.50 cwt., producers' plants for regular or partially delactosed.

**Chicago:** Demand fair; supply adequate; $5.25 cwt., f.o.b. plant.

**Cincinnati:** Demand fair; trend steady; supply adequate; $5.90 cwt.

**Los Angeles:** Demand steady; trend firm; supply adequate; $5.90 cwt. in carloads; $6.15 cwt. in l.c.l.

**Minneapolis:** Steady trend; fair demand; adequate supply; $5.40@5.60 cwt. Other sources quote $5.25 cwt., f.o.b. producer's point for both regular and partially delactosed.

**TAILOR MADE FOR YOU**
PAXCO DEHYDRATED CORN COB MEAL is supplied in six superior grinds—from bulky-coarse to pelleting-fine! Eliminate regrinding and rehandling. Get the best. Write to
PAXTON PROCESSING CO., INC.
P. O. Box 120 Paxton, Ill. Phone 222

**FEED INGREDIENTS**
Fish Meal • Scrap • Solubles
*Bigelow Sales Company*
10 Bridge St. NEW YORK 4, N.Y.
Tel. HAnover 2-9195

### FEATHER MEAL (HYDROLYZED)

**Ft. Worth:** Demand good; supply very limited; 85% to 87% protein $107, f.o.b. trucks, north Texas plants.

**Boston:** Demand steady; supply light; $85, f.o.b. shipping points.

**Los Angeles:** Demand good; trend firm; supply tight; $1.25 a unit of protein.

**Atlanta:** Demand fair; trend steady; supply limited; $91, f.o.b. Alabama and Georgia producing points, immediate.

**Salisbury, Md.:** Good demand; limited supply; $93, bulk, f.o.b. producers' plants.

### FISH MEAL

**New Orleans:** Demand light; supply limited; trend steady; menhaden 60% $140@141; scrap $132@133, f.o.b. Gulf.

**San Francisco:** Demand fair; supply ample; Peruvian fish meal $2.20 a unit of protein.

**Ogden:** Supply average; $2.20 a unit, f.o.b. Coast; 65% $151@153.

**Louisville:** Demand poor; trend steady; supply light; $150.

**Ft. Worth:** Demand urgent; supply critically short; menhaden unobtainable; Peruvian 65% protein $155, nominal; f.o.b. Houston, late September-October in parcels of 50 tons only.

**Portland:** Demand good; trend lower; supply limited; $2.35 a unit.

**Milwaukee:** Demand and supply fair; $157.50.

**Seattle:** Demand good; trend strong; supply limited; $2.50 a unit protein, ex-dock, Alaska herring.

**Los Angeles:** Demand fair; trend steady; supply not too plentiful; local production, 60% protein $2.15 a unit.

**Boston:** Demand good; supply scarce; $135@138, f.o.b. shipping points.

**Chicago:** Demand good; supply very tight; eastern menhaden fish meal, 60% protein $140@144; Gulf, nominally $140@144; western blended, 60% protein $2.10 a unit of protein; delivered Midwest points $167; Northwest herring-salmon blend $133@135; Canadian herring, 73% protein $2.25@2.40 a unit of protein subject to production.

**Minneapolis:** Steady trend; fair demand; adequate supply; 60% $158; 70% herring $2.40 a unit, West Coast.

**Atlanta:** Demand good; trend strong; supply limited; 60% $148, nominal.

**Buffalo:** Demand very good; trend higher; supply very scarce; 60% protein, menhaden $155 bulk, $160 sacked.

### HAY

**Ogden:** Supply normal; $1 bale; $15 ton in field; $18 in barn.

**Philadelphia:** Demand slow; supply fair; $32@35.

**Ft. Worth:** Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $36@38, No. 2 $34@36; prairie, No. 2 $26@28; No. 2 Johnson grass $22@24, delivered Texas common points.

**Wichita:** Demand poor; supply ample; prairie $8@10; alfalfa $10@12.

**Louisville:** Demand dull; trend steady; supply fair; No. 1, any local hay $35, No. 2 $33; straw $20; most hay now coming from Ohio or northern states as much of the Kentucky hay is quite poor.

**Portland:** Demand good; supply ample; trend unchanged; $26.

**Seattle:** Demand slow; trend firm; supply good; alfalfa, U.S. No. 2 green $28, truck lots.

**Boston:** Demand fair; supply improving; No. 2 timothy $41@43.

**Cincinnati:** Demand fair; trend steady; supply adequate; No. 1 timothy $24; No. 1 second cutting green alfalfa $31; mixed $27; wheat or oat straw $19.

**Los Angeles:** Demand active for top quality with supplies light; trading in other grades very slow; U.S. No. 1 $30@31; U.S. No. 2 leafy $27@28; U.S. No. 2 green $26@28; U.S. No. 2 $24@25.

### HOMINY FEED

**New Orleans:** Demand fair; trend steady; supply adequate; $53.50@55.

**Louisville:** Demand slow; trend slightly stronger; supply light; $53.50.

**Memphis:** Demand nil; trend steady; supply ample; white $51.50, yellow $51.50.

**Seattle:** Demand fair; trend easy; supply good; $55, delivered, sacked, carlots.

**Boston:** Demand fair; supply ample; $51.50.

**Kansas City:** Demand fair; trend steady; supply adequate; yellow $38, bulk, for immediate, $34 for immediate through December, $3.50 more for sacks; white $1 less.

**Chicago:** Demand fair; supply adequate; $47@47.50.

**St. Louis:** Demand slow; trend lower; supply ample; yellow $45.50.

**Milwaukee:** Demand good; supply fair; $47.50.

**Cincinnati:** Demand good; trend steady; supply fair; $50.

**Buffalo:** Demand fair; trend lower; supply good; $50.50, bulk, Boston.

### LINSEED OIL MEAL

**San Francisco:** Demand fair; supply ample; $68.

**Philadelphia:** Demand and supply fair; 34% $72.

**Ft. Worth:** Demand steady; supply adequate; carlots, 34% solvent, October $74.50, November-December $75.50; pellets $2.50 premium.

**Wichita:** Demand slow; supply ample; 34% $74.50.

**Omaha:** Demand fair; supply ample; 34% solvent $55.30, bulk; 32% old process $61.80, bulk, Omaha basis.

**New Orleans:** Demand slow; supply fair; trend steady; $75@76.

**Louisville:** Demand slow; trend fairly steady; supply ample; old process $74.40, steady; new process $67.40, off $1.

**Portland:** Demand slow; supply ample; trend unchanged; $78.

**Seattle:** Demand fair; trend steady; supply limited; $78, delivered car loads, 34% protein.

**Boston:** Demand and supply light; 34% $66.40 in bulk.

**Kansas City:** Demand slow; trend steady to stronger; supply adequate; solvent meal $50.50, bulk, Minneapolis for October; $51@51.50 for November-December; old process $56.50.

**Chicago:** Demand fair; supply adequate; solvent $54; expeller $60.50, basis Minneapolis.

**Milwaukee:** Demand good; supply fair; old process $66.50; new process $60.50.

**Cincinnati:** Demand poor; trend steady; supply adequate; new process $67; old process $73.50.

**Los Angeles:** Demand slow; trend steady; supply adequate; local production, 29% protein $60@61.

**Minneapolis:** Firm trend; active demand with supplies tight for spot shipment; new process $50.50 bulk; old process $57 bulk, O-N-D.

### MALT SPROUTS

**New Orleans:** Demand fair; trend steady; supply adequate; $42@44.50.

**Boston:** Demand and supply limited; $42.50.

**Chicago:** Demand fair; supply adequate; No. 1 $41.

**Milwaukee:** Demand good; supply fair; odd weights $41, even weights $43.

**Cincinnati:** Demand fair; trend steady; supply limited; No. 1 $45.

### MEAT AND BONE MEAL

**Ft. Worth:** Demand slow; supply adequate; meat and bone, 50% $105@107, f.o.b. or delivered Ft. Worth.

**Wichita:** Demand fair; supply sufficient; 50% $115, f.o.b. plant; 55%, no quotations, no offerings.

**Louisville:** Demand fair; trend steady; supply ample; $100.

**Ogden:** Supply average; $112.50, in 100-lb. bags.

**San Francisco:** Demand good; supply fair; $2.10 a unit of protein.

**New Orleans:** Demand fair; trend steady; supply average; $112@115.

**Portland:** Demand good; trend firm; supply limited; $2.30 unit.

**Omaha:** $112.

**Kansas City:** Demand fair; trend steady; supply adequate for demand; 50% meat and bone scraps $108.

**Seattle:** Demand good; trend steady; supply fair; $115, ex-warehouse, 50% protein.

**Chicago:** Demand fair; supply tight; 50% protein $102.50@105.

**New York:** Demand and supply poor; trend steady; 50% $85, 55% $92.50, bulk; 50% $88, 55% $95.50, sacked.

**Boston:** Demand light; supply good; $1.50 a protein unit; converted 50% $87.50.

**St. Louis:** Demand fair; trend steady; supply adequate; $108.

**Cincinnati:** Demand good; trend steady; supply short; 50% meat and bone scraps $100.

**Los Angeles:** Demand slower; trend easier; supply ample; 50% protein $2.25@2.30 a unit.

**St. Paul:** Firmer trend; improved demand; adequate supply; 50% $103@110.

**Buffalo:** Demand just fair; trend steady; supply ample; 50% meat scraps $95 bulk, $100 sacked.

### MILLFEED

**Minneapolis:** Firm trend; good demand for tight supplies caused by curtailed local production; bran $32@33.50, middlings $33@34.50, red dog $47.50@51.

**Kansas City:** Demand fair; trend steady; supply adequate; bran $30@30.75, shorts $37.25@38, sacked; bran $25@25.75, shorts $30.50@31.25, middlings $29@29.75, bulk.

**Wichita:** Demand good; supply sufficient; basis Kansas City: bran $29.75@30.25, shorts $36.50@37; bran declined 50¢ and shorts advanced 25¢ compared with the preceding week.

**Ft. Worth:** Demand good; supply fairly limited, especially on bran; carlots, burlaps, prompt, bran $39, gray shorts $44.50@45, delivered Texas common points; unchanged on bran and unchanged to lower on shorts, compared with previous week.

**Chicago:** A slight increase in demand appeared for millfeeds during the week ended Sept. 24, and the market developed a steady to firm condition. Buyers reportedly filling nearby needs only, however. Quotations: bran $36.10, standard midds. $38, flour midds. $47.50, red dog $52@54.

**St. Louis:** Demand good; trend higher; supply limited; bran $35.50@36, shorts $42.75@43.25, sacked; bran $30@30.50, shorts $35.75@36.25, middlings $34.25@34.75, bulk.

**Cincinnati:** Demand fair; trend steady; supply adequate; bran $41, middlings $43.

**Omaha:** Demand slow; supply ample; sacked bran $30.50; sacked gray shorts $37.50; bulk standard midds. $30, all Omaha basis.

**Boston:** Demand spotty; supply fair; bran $46@46.50, middlings $48.

**Buffalo:** Replacement demand by the country trade sparked an upturn in the millfeed market. Demand centered mostly in bran, but the differential on both bran and middlings widened out. Medium and

*For DEHYDRATED ALFALFA—*
**"MERRY MIXER"**
**GREENULES®**

*BETTER DISPERSION!*
*DUST-FREE! FREER FLOWING!*
*MORE UNIFORM!*
**CONSOLIDATED BLENDERS INC.**
Fremont, Nebr. • Phone Park 1-7000 ®TRADE MARK

FROM ICELAND **COD-LIVER-OIL** FROM ICELAND
VITAMIN-A-STABILIZED
**MIDLAND WESTERN, INC.**
160 W. SPRUCE ST., READING, PA.

# FEED GRAINS
# KAFIR-MILO
## BARLEY - CORN - OATS - WHEAT
*From Every Grain Producing Area in United States*
# CONTINENTAL GRAIN COMPANY

**OFFICES:**

New York, Chicago, Kansas City, St. Louis, Omaha, Columbus, Memphis, Norfolk, Nashville, Enid, Minneapolis, Louisville, Fort Worth, Buffalo, Toledo, Houston, Galveston, Portland, San Francisco, Vancouver, B.C., Winnipeg, Los Angeles

**TERMINAL ELEVATORS:**

Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

large mixers buying held steady. Sacked bran ended the week $3.50 higher and bulk rose $1.50; sacked middlings gained $1.50 and bulk was unchanged; red dog also held unchanged. Quotations Sept. 24: bran $39.50 @40, standard midds. $42@42.50, red dog $56@57.50; the bulk differential on both bran and middlings widened out to $6 from $4.50.

**New York:** Demand and supply fair; trend stronger; bran $47.50@48, standard midds. $50.50@51.

**Philadelphia:** Demand spotty; supply fair; bran $44.50, standard midds. $47.50, red dog $61.

**New Orleans:** Demand good; trend steady; supply tight; bran $42.25@43; shorts $45@46.75.

**Memphis:** Demand fair; trend steady; supply ample; wheat bran $38, gray shorts $45.25, standard midds. $43.25.

**Louisville:** Demand fair; trend easy; supply normal; bran $41.10, mixed feed or mill run $45, gray shorts $49.35, standard midds. $44.80.

**Seattle:** Demand fair; trend easy; supply ample; $44, delivered common transit points, carlots.

**Portland:** Demand slow; trend lower; supply ample; $44.

**Ogden:** Supply average; to Utah and Idaho: red bran and mill run $40, middlings $45; to Denver: red bran and mill run $47, middlings $52; to California: red bran and mill run $47.50, middlings $52.50, f.o.b. San Francisco and Los Angeles.

**San Francisco:** Demand fair; supply ample; millfeed $47; red bran $47.

**Los Angeles:** Demand fair; trend steady; supply ample; standard mill run $46.50@47; red bran $47@47.50.

### MINERAL FEED

**Ogden:** Supply normal; $115 in 50-lb. blocks; $103, granular, 50-lb. bags.

**Ft. Worth:** Demand fair; supply ample; all-purpose granules $89, block $94; mineral phosphorus, 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3½% granules $38, phosphorus 2% $78 (all in 50-lb. paper bags).

**San Francisco:** Demand steady; supply good; all-purpose with iodine $70.

**Wichita:** Demand good; supply sufficient; all-purpose with iodine, 50-lb. blocks $95; 100-lb. bags $90, f.o.b. plant.

**Portland:** Demand good; supply ample; trend unchanged; $42.

**Seattle:** Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse.

**Sioux City:** 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

### MOLASSES

**New Orleans:** Demand fair; trend steady; supply ample; 15¢ gal., tank cars and trucks; 600-lb. customers' drums $9.62.

**San Francisco:** Demand and supply good; $25, f.o.b. cars, Richmond, Cal.

**Ft. Worth:** Demand fair; supply sufficient; blackstrap 16¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $36.06 ton, seller's market price on date of shipment.

**Louisville:** Demand slow; trend steady; supply ample; 14¢ gal., car lots in tank cars, f.o.b. Gulf ports.

**Minneapolis:** Steady trend; fair demand; supply ample; 14¾¢ gal., New Orleans; $34.50 ton, f.o.b. terminal.

**Memphis:** Demand improved; supply ample; trend steady; blackstrap 14¢ gal., tank car, f.o.b. New Orleans, and $30 ton, delivered Memphis, truck.

**St. Louis:** Demand slow; trend steady; supply ample; 14¢ gal., New Orleans.

**Milwaukee:** Demand and supply fair; blackstrap 14¢ gal., f.o.b. New Orleans.

**Kansas City:** Demand fair; trend steady; supply adequate; 14¢ gal., tank car, New Orleans.

**Boston:** Demand slow; supply plentiful; 18½¢ gal., in tank cars.

**New York:** Demand and supply good; trend steady; blackstrap 18¢ gal., tank cars, tank wagons, f.o.b. New York.

**Cincinnati:** Demand fair; trend steady; supply adequate; 14¢ gal., New Orleans.

**Los Angeles:** Demand good; trend steady; supply adequate; $25 bulk, f.o.b. tank cars; $28.25 bulk, f.o.b. tank trucks.

**Seattle:** Demand fair; trend steady; supply good; $25, f.o.b. Seattle, tank car lots or truck lots.

**Atlanta:** Demand good; trend strong; supply limited; citrus $22.50, bulk, f.o.b. Florida producing points, immediate, nominal.

**Buffalo:** Demand fair; trend steady; supply adequate; 18½¢ gal., f.o.b. Albany.

### NIACIN

**New York:** Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

### OAT PRODUCTS

**Louisville:** Demand fair; trend stronger; supply ample; reground $20.30, rolled $83.30, feeding $79.30, pulverized white $50.30, crimped white $64.30.

**Portland:** Demand good; supply ample; trend unchanged; rolled $61; ground $58; cleaned $60.

**Philadelphia:** Demand slow; supply fair; pulverized white $51.50; Canadian oat feed $26.50; domestic oat feed $23.50.

**Ft. Worth:** Demand slow; supply sufficient; oat millfeed $44.70; reground oat millfeed, 3% protein, sacked $32.70.

**Chicago:** Demand fair; supply adequate; reground oat feed $13@13.50; fine ground feeding oatmeal $66.50@67; feeding rolled oats $76@78.

**Los Angeles:** Demand fair; trend easier; supply ample; pulverized, local production $60.

**Minneapolis:** Steady trend; good demand; tight supplies for nearby; feeding rolled $77; pulverized $42@43; feeding oatmeal $68; reground $13@15; crimped oats $54.

**Memphis:** Demand poor; trend steady; supply ample; 3½% protein, reground oat feed $19.

**Boston:** Demand good; supply fair; white pulverized $55@56; reground oat feed $18.50.

**Seattle:** Demand fair; trend firm; supply ample; $49 bulk, delivered truck lots.

**Cincinnati:** Demand fair; trend steady; supply adequate; reground oats $22; pulverized white oats $47; rolled oats $50.

### OYSTER SHELL

**New Orleans:** Demand good; trend steady; supply plentiful; $15@15.50.

**San Francisco:** Demand fair; supply ample; local $15, eastern $26.

**Louisville:** Demand fair; trend steady; supply normal; in 80-lb. paper $22.85, 50-lb. paper $23.10, 25-lb. paper $25.35.

**Portland:** Demand good; supply ample; trend unchanged to higher; western $34, eastern $38.50, granite grits $24, shell flour $24.

**Boston:** Demand and supply steady; $25 in paper.

**Seattle:** Demand and trend steady; supply good; eastern $36, delivered, carlots.

**Los Angeles:** Demand and trend steady; supply ample; $14.80.

**Cincinnati:** Demand fair; trend steady; supply adequate; $21.75.

### PEANUT OIL MEAL

**Milwaukee:** Demand and supply fair; 26% $42.50.

**Atlanta:** Demand fair; trend steady; supply limited; 46% $68.

### PEAT MOSS

**San Francisco:** Demand fair; supply ample; $3.75 bale.

**Philadelphia:** Demand slow; supply light; $2.90 bale, f.o.b. pier.

**Portland:** Demand slow; supply ample; trend unchanged; $3.25 bale.

**Seattle:** Demand poor; trend easy; supply good; $2.70 bale, delivered, truck lots.

**Boston:** Demand and supply steady; $3.15 bale in carlots.

**Chicago:** Demand fair; supply adequate; $3.60@3.70 standard 7½ cu. ft. bale.

**Los Angeles:** Demand fair; trend steady; supply ample; Canadian 6.1 cu. ft. bales $3.95.

### POTASSIUM IODIDE, U.S.P.

**Cincinnati:** Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drum $1.38; 25-lb. drum $1.41, f.o.b. Cincinnati.

**Chittenango, N.Y.:** Demand good; supply adequate; 90% KI stabilized with calcium stearate, 200-lb. in 100-lb. cartons $1.35; 100-lb. cartons $1.36; freight prepaid to destination.

### POULTRY BY-PRODUCTS

**Ft. Worth:** Demand good; supply very limited; 55% protein $112.50, f.o.b. north Texas plants.

**Boston:** Demand fair; supply tight; $109, f.o.b. shipping point.

**Los Angeles:** Demand slower; trend easier; supply ample; $1.90 a unit of protein.

**Atlanta:** Demand fair; trend steady; supply limited; $108, f.o.b. Alabama and Georgia producing points, immediate.

**Salisbury, Md.:** Good demand; limited supply; $100, bulk, f.o.b. producers' plants.

### RIBOFLAVIN

**Cincinnati:** Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid or paid to destination.

**New York:** Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

### RICE BY-PRODUCTS

**San Francisco:** Demand fair; supply ample; bran $40; polished $49.

**Ft. Worth:** Demand fair; supply tight; carlots, rice bran, nominal $31@32, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

**Los Angeles:** Demand fair; trend easier; supply adequate; bran, California production, high fat content $48.

**Atlanta:** Demand fair; trend steady; supply limited; bran $42.

### SCREENINGS

**Ft. Worth:** Demand almost nil; supply sufficient; ground $28, nominal.

**Chicago:** Demand fair; supply adequate; ground grain screenings $30; Canadian, bulk $20.

**Minneapolis:** Market tight because of very light offerings and pickup in demand; lights $1@8, mediums $9@20, heavies $21 @30; Canadian, bulk $15; Canadian ground $24.50; flaxseed screenings $33; oil type flaxseed screenings $38, basis 15%.

**Cincinnati:** Demand fair; trend steady; supply adequate; ground screenings $34, sacked; malt house $27, sacked; Canadian $25, in bulk.

**Buffalo:** Demand and supply fair; trend unchanged to higher; ground, sacked $29, New York, lake and rail; unground, bulk $23, New York.

### SOFT PHOSPHATE WITH COLLOIDAL CLAY

**Atlanta:** $20.40@20.67.
**Buffalo:** $25.31@25.45.
**Chicago:** $24.77@24.90.
**Cincinnati:** $23.47@23.60.
**Des Moines:** $25.23@25.35.
**Kansas City:** $24.88@25.
**Memphis:** $22.20@22.47.
**Minneapolis:** $25.92@26.06.
**Philadelphia:** $24.32@24.95.
**St. Louis:** $24.14@24.27.

### SORGHUMS

**Ft. Worth:** Demand fair; supply sufficient; rains delaying harvest on south plains; carlots, bulk, No. 2 yellow milo $2.08@2.10, delivered Texas common points.

**Los Angeles:** Demand steady; trend easier; supply ample; milo $2.27½ cwt., bulk.

### SOYBEAN OIL MEAL

**Wichita:** Demand good; supply sufficient; 44% $72.50; 50% $82.50, f.o.b. Wichita.

**Philadelphia:** Demand and supply fair; trend unsettled; 44% $57.50.

**Omaha:** Demand good; supply tight; 44% $69.90, bulk.

**New Orleans:** Demand slow; trend steady; supply adequate; $69@70.

**Ogden:** Supply average; $81@86.

**San Francisco:** Demand fair; supply ample; $88.50.

**Louisville:** Demand slow; trend easy; supply normal; $68.20.

**Portland:** Demand slow; trend higher; supply moderate; September $53, October-December $46, f.o.b. Decatur.

**Los Angeles:** Demand steady; trend firmer; supply of nearby tight; $88.50@89.50.

**Minneapolis:** Firm trend; very good demand for spot supplies which are very scarce; 44% $57, bulk, Decatur; $69.50, bulk, Minneapolis; 50% $79.50, bulk, Minneapolis.

**Boston:** Demand cautious; supply ample; 44% $59.50; 50% $69.50, both bulk, f.o.b. Decatur.

**Kansas City:** Demand fair in this area; trend weaker for forward shipment; supply very tight for immediate; meal for Kansas City and western shipment $63.50, bulk, Decatur for this week, $61 for next week; unrestricted meal $61 for next week.

**Chicago:** Soybean oil meal for September delivery virtually was unavailable in the central states area during the week ending Sept. 24, although a fairly good volume of trading for first half October was reported. Inventories are being held to a minimum, with the expectation that some price concessions might be made for new crop meal. Prices eased around $2 this week. Quotations: 44% protein soybean oil meal, unrestricted, bulk, Decatur $57; 50% $66.

**Memphis:** Demand good; trend higher; supply scarce; prime 44% solvent $72.

**St. Louis:** Demand good; trend higher; supply tight; 44% $68.

**Cincinnati:** Demand and supply fair; trend steady to lower; $61, bulk, Decatur.

**Atlanta:** Demand good; trend strong; supply limited; 44% $78.

### TANKAGE

**Ft. Worth:** Demand fair; supply light; 60% digester $110@112, f.o.b. Ft. Worth.

**Wichita:** Demand fair; supply sufficient; 60% $117.50, f.o.b. plant.

**Omaha:** $112.

**New Orleans:** Demand fair; trend steady; supply tight; $122@125.

**Cincinnati:** Demand fair; trend steady; supply ample; 60% digester $107.50.

**St. Paul:** Steady trend; supply fair; demand fair; 60% digester $107.50@112.

**Chicago:** Demand fair; supply tight; 60% protein $110@112.50.

**Kansas City:** Demand fair; trend steady; supply adequate with several packers well sold up; 60% digester $108@111.

**St. Louis:** Demand fair; trend steady; supply adequate; $108.

### VITAMIN E FEED SUPPLEMENT

**Cincinnati:** Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55; freight allowed to destination.

**New York:** Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

**Rochester, N.Y.:** Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

### WHEAT GERM MEAL

**New Orleans:** Demand good; supply adequate; trend strong; $90@92, cottons.

**Chicago:** Firm trend; good demand for very tight supplies; $104.

**Buffalo:** Demand fair; trend higher; supply poor; commercial grade $100, nominal.


**MANEY BROS. MILL & ELEV. CO.**
Minneapolis, Minnesota
Feed Ingredients of All Kinds
**FORMULA MIXING FOR DEALERS**
Excellent References

CHECKERBOARD — *The Mark of Top Quality — Top Service*

WABASH ELEVATOR
4,000,000 BUSHELS

# MILO—CORN
## ALL FEED GRAINS

**CHECKERBOARD GRAIN CO.**

BOARD OF TRADE BLDG. • KANSAS CITY, MO. • PHONE HA 1-1114
ST. LOUIS • CHICAGO • MINNEAPOLIS

## PACKAGING

(Continued from page 6)

the south, mountain states and the Pacific Coast region.

The last question was: "Do you deliver by tailgate airlift bag-to-bulk truck?" Approximately 37% of the mills replied that they make use of this method of delivering bulk feed to farmers. As expected, this practice is used mostly by local mill operators delivering their feed to the farm.

**Dealer Survey**

Also surveyed in the study were 400 dealers in three regions, all in the Midwest and Southwest.

One question in the survey was: "Is the greatest percentage of your packaged feed delivered in paper or burlap?"

Sixty percent of the dealers in the three regions said paper and 40% said burlap. Regionally, paper led in the northern great plains section, while burlap led in the Great Lakes states and the southwestern section covered in the study.

The dealers also were asked whether they felt the demand for bulk deliveries was increasing or not. Contrary to the findings in the survey of mills, some 55% of the dealers felt that bulk demand was not increasing. This feeling was strongest in the southwestern region. In the plains states — Minnesota, Iowa, Missouri, the Dakotas and Nebraska—the dealers were about evenly divided.

Asked whether they were equipped to handle bulk, 43.5% of the dealers said yes and 56.5% said no. The "yes" percentages ranged from 35 in the midwestern states around the Great Lakes to 55 in the southwestern states included in the study—Arkansas, Oklahoma, Texas and Louisiana.

Dealers were asked, too, whether they intended to invest in bulk feed equipment. All told, 32.5% of the dealers replied yes, and 67.5% said no. Of the 174 who indicated in the previous question that they are now equipped to handle bulk feeds, 65 dealers said they intend to invest in further bulk equipment and 109 said they did not. Of the 226 dealers not now equipped to handle bulk, 64 said they planned to buy equipment and 162 said they did not.

## AROUND

(Continued from page 7)

as their guests the Costa Rican ambassador to Mexico, Sr. Alejandro Alvarado Piza and his wife, Senora Soledad Piza. Costa Rica is well represented at this Congress. Mr. Jimenez is sales manager and director of nutrition of Malta, S.A., one of the leading breweries of Mexico, which is just entering the manufactured feed business, having built a most modern push-button Sprout-Waldron mill in Mexico City. A grand opening was to be held by the company Sept. 24, correlated with the Poultry Congress. I received a beautifully-engraved invitation . . .

On Sept. 18 at luncheon in the Prado Grill, who should walk in but Ray Ewing of Pasadena, his wife and his U.S. regional sales manager, "Red" Harrison. Ray exclaimed, "Sammy, can't I go anywhere without bumping into you?" I replied, "Wherever Ray goes, so goes Sam." Ray introduced me to his guest, Dr. José Santivaniez, D.V.M., head of Eaton Interamericana, Norwich, N.Y. This company distributes the nitrofurans, etc., in Mexico, as an independent company, having no affiliations with U.S. distributors. Later that afternoon I ran into Dr. Harold L. Wilcke, assistant director of the Ralston Purina research department, and his wife, Esther. A while later I met Mr. McLean of Ultra Life Laboratories . . .

The next day I greeted and enjoyed breakfast with Louis Novins and his wife, "Pete," of the Lecompte Feed Co., Lakewood, N.J. Lou and Pete are attending the Congress and spending one or two weeks touring the Mexican Republic. I had lunch with a dynamic individual, Sr. José Arriguanaga, assistant to the purchasing director of Api-Aba Feed Manufacturing Co. This is the Archer-Daniels feed company of Mexico, a major supplier of manufactured feeds. From José I learned that Mexican feed manufacturers have organized an association similar to the American Feed Manufacturers Assn. It goes by the name Asociacion Nacional de Fabricantes de Alimentos para Animales (Association of Manufacturers of Feeds for Animals). I will receive their official bulletin later and will send it to the attention of Ed Glennon and Bill Diamond of the AFMA. Perhaps they can work together for mutual interests. (Mr. Glennon was to attend the congress, but had not arrived at the time this report was being written.) . . .

Taxi fares in Mexico City are extremely low. One can ride in a cab alone for 20-30 min. for about five pesos, or 40¢. Then there are the one-peso cabs. The driver holds out his hand showing one finger, and if you stop him, you enter the cab, joining two or three other passengers, and ride almost anywhere on regular routes through Mexico City for one peso, or 8¢. In the U.S. we enter a cab in any city and for the privilege of entering we pay from 35¢ to 50¢. This should be an index to Americans showing a rather dramatic contrast to the economics of living in Mexico . . .

I enjoyed a very happy few hours with Robert L. Hogue, Lafayette, Ind. He is the coordinator of all U.S. activities at this congress. From Bob we learn that the U.S. Department of Agriculture exhibit at the Auditorium Nacional is outstanding, costing $50,000. The theme is to present the U.S. poultry and allied industry story, and the willingness of Uncle Sam to pass on all information possible to world poultry interests that would help to provide world populations with the benefits of poultry and eggs for the betterment of human nutrition. In addition, 50 U.S. poultry and allied industries have exhibits. A quick stroll through the National Auditorium revealed the fact that the Mexican decorators outdid themselves creating sensational construction works of art, for which Mexico is noted . . .

As I was about to leave for dinner, I heard shouts of recognition and met quite a group of feed people. I served as a one-man greeting committee to Mr. and Mrs. Ralph Cleveland, Gainesville (Ga.) Milling Co., Mr. and Mrs. Arthur Upshaw, Mocksville (N.C.) Feed Mills; Mr. and Mrs. S. Kendricks, also associated with the Mocksville Feed Mills; Mr. and Mrs. Chuck Fulton, Knox Snowhill Hatcheries, Snowhill, Md.; Mr. and Mrs. H. F. McCarty, McCarty Enterprises, Magee, Miss.; Mr. and Mrs. Joe F. Sanderson, Sanderson Bros., Inc., who operate a feed plant, hatchery and broiler operation at Laurel, Miss., and Mr. and Mrs. Fred L. Gaddis, Gaddis Industries, Forest, Miss. . . .

At the congress headquarters there was quite a scene of intense activity. From what I could see, thousands of prominent poultrymen and poultry scientists were arriving from practically all countries of the world. Russia sent a large delegation. The congress was well advertised throughout all Mexico. There is a genuine feeling of pride on the part of Mexican officialdom and Mexican feed interests because of Mexico's having been chosen as the scene of the Congress . . .

The U.S. was to be host to 1,400 people Sept. 25 with a huge barbecue and social events. Most American visitors are taking tours of points of interest in and around Mexico City.

(The Congress program opened Sept. 19 with that day and Sept. 20 devoted to registration. The official program opened Sept. 21, with Sept. 22 being taken up with the first plenary session and visits and excursions. Presentations of papers, special sessions and more excursions took place on Sept. 23, 24, 25 and 26. The Congress program ended Sept. 27 with a summing up by chairmen of the work of their sections, and a closing ceremony of the congress. The closing festival is Sept. 28.)

## TEXAS

(Continued from page 1)

dues, which will be collected on a check-off plan, and other details.

The vote in Center followed talks by Sam Twedell of Dallas, Texas, union vice president for southwestern states, and W. W. Barker of Shreveport, La., head of the poultry department of the union.

In introducing Mr. Twedell, Mr. McMillan said, "Broiler growers are wage earners and simple common sense and self interest demand that we work with or within the great labor unions which have done so much for the happiness and well-being of millions of wage earners and contributed substantially to state, community and national economy."

Mr. Barker, in his talk, said that help in the sale of broiler chickens will come through the meat cutters pushing the product in stores and through the seeking of legislation beneficial to growers by the union in Washington.

Mr. Twedell accused the chain stores of holding the broiler chicken prices down as a leader to get customers into the stores. While the feed dealers and processors made their share, he said, the reduced prices fell back onto the grower.

**Tells Broader Plans**

Mr. Barker told the Texas farmers that their affiliation was the beginning of an organized movement of broiler growers throughout the nation.

"Every farmer and the entire industry is watching with interest your action today," he said. Merely to organize the Texas broiler industry would not solve the problem, however, he said.

"We have to go into other areas as rapidly as possible. Once the initial step is taken, once the initial group has started, there are other groups standing by to step in also. You are the first. But remember you cannot have a Utopia here and leave the rest of the industry on a sharecropper status."

Mr. McMillan, the TBA president, said that the organization is not going to make trouble for anybody.

"I personally have many friends in the industry, and all we have ever asked of the industry is that they do unto us as they would have us do unto them," he said.

At the Sept. 20 meeting, Mr. McMillan was reelected unanimously as president of the TBA for a fourth term.

## SOYBEAN

(Continued from page 1)

market in the new crop year. They contend that the upcoming big pig crop and other outlets will absorb the meal without any substantial price breaks.

In fact, they see the oil program as a market stabilizing influence since it will cut back a carryout of soybeans on Sept. 30, 1959, which has been estimated at 90 million bushels.

These officials look for the program to be a stabilizing factor for soybean meal in a range of $42.50 to $50 ton.

All of the foregoing from USDA sources is based on a soybean crop of at least 550 million bushels. Some persons think the crop may run to between 575 aand 600 million.

Meanwhile, other USDA sources indicated that CCC will be asked to implement the cottonseed price support program this year in the following general terms:

1. For all ginners and crushers who pay producers not less than $41 ton for seed, CCC stands ready to buy oil at the lowest offering price, crude basis, with the crusher retaining the meal, hulls and lint.

2. At current cottonseed oil prices, it is not expected that CCC would obtain any substantial quantities of oil on a "lowest" offer, but this proposal—likely to be okayed—indicates that any oil offered on this basis will eventually work itself into the donation program.

It should be repeated that if this edible oil donation program is adopted—and all signs indicate it will be—the addition of soybean meal to the national supply is not likely to block normal marketings of that product. It must be remembered, too, that the availability of cottonseed meal this current crop year is limited by the total supply of cotton.

**Political Aspects**

Also, the political aspects of the CCC intentions regarding disposal of soybeans through oil donations for foreign and domestic purposes are not an inconsequential consideration.

In a recent report to the grain storage advisory committee, USDA reported that on the basis of the Sept. 1 crop report there would be a carryout of beans Sept. 30, 1959, amounting to about 90 million bushels, without a donation program for oil.

## CONTROL

(Continued from page 1)

M. Briggs, National Institutes of Health, Bethesda, Md.; "Past and Present Nutritional Research," by Dr. C. D. Caskey, Cooperative Mills, Inc., Baltimore, Md., and "The National Feed Ingredients Assn.," by Peter W. Janss, Des Moines, Iowa.

Reports of committees also are scheduled for the morning session Oct. 16, as are the election of officers and other business.

The concluding part of the program will be an afternoon session for control officials only. This will include a discussion of new definitions and regulations as well as other topics.

## CONGRESS

(Continued from page 7)

and Hermon I. Miller; government advisors were David R. Strobel, Harlan L. Shrader and John J. Scanlan, all of USDA, and William G. Lodwick, Agricultural Attache of the American Embassy in Mexico City. The USDA staff included David M. Granahan, J. K. McClarren, Clifton C. Warren, Bill Schaal, Walter W. John, Mary T. Swickard, Edward Karpoff, William E. Hauver, Paul B. Zumbro, R. M. Fraps, E. H. McNally and S. J. Marsden.

The official U.S. committee was made up of H. H. Alp, chairman; C. D. Carpenter, vice chairman; E. Karpoff, secretary; G. F. Heuser, treasurer; H. L. Shrader, subcommittee chairman, exhibits; M. C. Small, subcommittee chairman, membership; A. N. Schwartz, subcommittee chairman, publications; E. M. Funk, subcommittee chairman, papers; J. W. Kinghorne, subcommittee chairman, tours, and O. A. Hanks, subcommittee chairman, fund raising.

These poultry congresses have been held every three years since 1921, except for a wartime interruption. The first meeting was in The Hague, followed by a meeting in Barcelona in 1924, in Ottawa in 1927, London in 1930, Rome in 1933, Berlin in 1936, Cleveland in 1939, Copenhagen in 1948, Paris in 1951 and Edinburgh in 1954.

## IOWA

(Continued from page 6)

cin" is a contraction of the words neutralize and mycin. I refer to it as a new antibiotic which promotes growth of the feed salesman and prevents development of technicalities. It is an antidote for technical complications in the salesman's or dealer's contact with farmers. In other words, let's neutralize the technical complications in our sales presentations.

Feed nutrition is becoming far too technical for the salesman and dealer to keep clearly informed. We used to sell our products based on results, the need for a blend of many ingredients; we also talked management factors. Now, 90% of what you hear probably is based around some of the additives. They are important, but is it necessary or intelligent to get so far away from the basic story of a balanced ration and good management?

In view of the increasingly technical aspects of our products, it would be better if we left the technical subjects to the technical people. Let's depend on our nutritionists to handle nutrition problems. Let's depend on college specialists. Let's ask them only for that information necessary to tell the sales advantages of our products. Let's go back to some old fashioned selling methods, talking balanced rations and selling management methods to help improve results. If we follow this program of real service, there will be more business for all of us.

**HELPING THE FARMER UNDERSTAND NUTRITION—Dr. Norman Jacobson, dairy department, Iowa State College:** Everyone in the feed industry need not know all the details about nutrition, but certain basic aspects should be understood. (Dr. Jacobson went on to outline certain basic principles about nutrient requirements, with particular attention to ruminants.)

With dairy cows, we are inclined to overlook the most common deficiency—insufficient energy. Milk production is limited by insufficient energy more often than by any other nutritional factor.

It is important in animal nutrition to think first of the nutrient requirements for the particular animals with which we are concerned and of the factors influencing those requirements. With ruminants, and dairy cattle in particular, forage quantity and quality affect so markedly the nature of concentrates needed that they cannot be ignored.

In my opinion, the best way to help the farmer with nutrition problems is: (1) Know at least as much about nutrition as he does, (2) make constructive suggestions and no misleading claims, (3) don't try to sell him something that he doesn't need or that is impractical from an economic standpoint.

**HELPING THE FARMER UNDERSTAND BEEF CATTLE NUTRITION—Dr. Wise Burroughs, animal husbandry department, Iowa State:** Irrespective of quantities of roughage in the ration, cattle will usually consume daily an amount of feed (air-dry basis) equivalent to 2½ to 3% of their liveweight. This varies according to age, condition and type of ration. Growing cattle receiving adequate feed composed largely of roughage should gain 1.0-1.5 lb. daily. Fattening cattle getting generous amounts of grain should gain 2.25-3.00 lb. daily with stilbestrol in the supplement—2.00-2.50 lb. without stilbestrol. Fattening calves usually gain .50-.75 lb. less than heavier yearling and two-year-old cattle.

High energy rations with plentiful grain are important, especially during the last 90-day finishing period. Prior to the finishing period less grain and more roughage can be included. Fattening cattle require about 10% protein in their total ration. The importance of feeding minerals has been recognized for a long time. Vitamins of importance are A, D and E.

Nutrient needs of rumen microorganisms are approximately similar to the body needs of cattle, and both must be supplied simultaneously through the ration.

Various feed additives are being used. Stilbestrol in fattening rations has received the greatest usage. Certain antibiotics have shown some promise in drylot feeding. Many other additives are being tested, but have not had enough work to be widely recommended.

**A COLLEGE-INDUSTRY POULTRY MANAGEMENT PROGRAM—L. Z. Eggleton, poultry extension, Iowa State:** There should be college and industry coordination in helping egg producers maintain profitable management programs.

Iowans should be urged to raise poultry only if it fits into a balanced farming program on the individual farm and if the producer can house at least 500 layers. Other suggestions include: Select stock that will give maximum production under the farm's equipment and housing system, time the laying peak for high egg price months in the fall; replace the flock annually; house pullets by the time they are in 10% production or by five months of age; year-round confinement in well-insulated, mechanically-ventilated houses; labor-saving equipment, including enough feeder space, water space and laying space; seeking out a strict, quality market on a year-round basis; adopt proven egg quality practices, including gathering eggs three to four times daily, cooling with mechanical refrigeration (immediately after gathering), dry cleaning dirty eggs, cool at least 12 hours, case eggs small end down in pre-cooled cases, market twice weekly; adopt a disease prevention routine; feed a balanced ration, making maximum use of home-grown grain.

**WHY THE FEED FAILED (or, What Turned That Feed Man Gray?)—Dr. Damon V. Catron, animal husbandry department, Iowa State:** Suppose you sold a hog producer a bag of feed into which went the latest know-how in nutrition and feed technology. Unless properly serviced, the next call may bring the comment, "The feed is no good."

What caused the feed to fail?

1. Genetically inferior breeding stock. Good feed can't succeed if fed to inferior breeding stock.

2. Disease. Many diseases cause inefficient results.

3. Inadequate housing and equipment. Of all factors influencing hog production, housing and equipment are probably the most deficient.

4. Parasites — worms, lice and mange. There are other "hidden hands in the feed bag."

5. Over-medication. Responses to drugs cause farmers to let down on management. Their pigs get sick, and it not only takes more but a higher priced feed to bring them out of it. Also, over-medication can cause metabolic disturbances and bring exaggerated nutritional deficiencies.

6. Feed improperly used. A balanced ration may be misused by overfeeding or underfeeding; often supplements are not fed in proper proportion to grain.

7. Weather. Feed can really be made to look sad by extreme hot weather when the animal loses his appetite or by extreme cold when he burns up part of the feed to keep warm.

8. Lack of care—lack of anemia preventive measures, not giving enough feed, lack of bedding, failure of the pig to balance the ration in free choice feeding, etc.

9. Poor storage of feed at the farm. Fresh feeds always out-perform stale feeds.

About every seventh bag of feed is wasted because 3 out of 10 pigs born never reach market. It is because of these "hidden hands in the feed bag" that it is necessary to follow up sales with service.

**SWINE MANAGEMENT SUGGESTIONS—Dr. V. C. Speer, animal husbandry department, Iowa State:** We have a new college-industry pamphlet for Iowa giving "Swine Management Suggestions." For the most part these are only suggestions, developed through experience rather than through research. Specific management research has been, is and will continue to be practically nonexistent because of lack of financial support. In its present research status, new developments in management will come as incidental findings in other research areas.

Research findings include: Breeding performance records show a problem in conception rate during hot weather. In multiple farrowing systems, the number of sows to be bred during hot months should be increased to insure full production. Another alternative is to cool the sows and boars. During lactation, high temperatures cause a reduction in milk flow. Any good swine manager will use farrowing stalls. Injectable iron-dextran does a good job in anemia control. Early weaning will become standard, and its adoption will be rapid if better housing, equipment, disease control and management are found.

There is a revolution taking place in feeding-management of growing-finishing hogs. Confinement feeding is increasing as a result of development of balanced rations. When good land is involved, maximum productivity is not hog pasture. Experiments show faster gains on complete rations.

**SELLING MEANS SERVICE — Tom Lawrence, Lawrence-Leiter & Co., Kansas City:** Leadership and selling are synonymous. Perhaps the most consistent demand on all levels of management is the ability to work effectively with other human beings. Sales leadership is based on both skill and understanding in getting along with others. Leadership is a function that depends on these fundamentals:

1. Develop emotional maturity, a primary demand of leadership.

2. Learn that you can predict human conduct.

3. Deliberately overestimate the importance of the other person's point of view.

4. Be yourself, but don't underestimate yourself.

5. Take a genuine interest in other people.

The ability to predict, move and control human behavior comes in great measure to those who know how to recognize people as they are and deal with them as they are.

Making a sale calls for a meeting of the minds, and the salesman must be aware of what his prospect is thinking and what he needs to help conclude the sale.

## Chicks Placed in Principal Broiler Areas

(000's omitted)

| Week ending | Maine | Conn. | Penn. | Ind. | Ill. | Mo. | Del. | Md. |
|---|---|---|---|---|---|---|---|---|
| July 19 | 1,181 | 635 | 1,038 | 949 | 174 | 739 | 2,173 | 1,919 |
| July 26 | 1,157 | 592 | 952 | 959 | 173 | 769 | 1,928 | 1,976 |
| August 2 | 1,155 | 548 | 953 | 903 | 156 | 704 | 1,935 | 1,921 |
| August 9 | 1,142 | 557 | 895 | 993 | 179 | 755 | 1,929 | 1,795 |
| August 16 | 1,180 | 603 | 924 | 880 | 210 | 728 | 1,907 | 1,831 |
| August 23 | 1,124 | 657 | 827 | 851 | 194 | 671 | 1,668 | 1,853 |
| August 30 | 1,071 | 623 | 940 | 886 | 180 | 643 | 1,759 | 1,798 |
| September 6 | 1,022 | 600 | 938 | 870 | 226 | 628 | 1,483 | 1,930 |
| September 13 | 1,070 | 536 | 758 | 864 | 142 | 583 | 1,566 | 1,763 |
| September 20 | 878 | 513 | 692 | 752 | 180 | 552 | 1,371 | 1,714 |

| Week ending | Va. | W. Va. | N.C. | S.C. | Ga. | Fla. | Ala. | Miss. |
|---|---|---|---|---|---|---|---|---|
| July 19 | 1,481 | 653 | 2,711 | 376 | 6,340 | 240 | 2,853 | 2,037 |
| July 26 | 1,391 | 657 | 2,699 | 397 | 6,204 | 219 | 2,955 | 2,037 |
| August 2 | 1,361 | 624 | 2,655 | 349 | 6,018 | 233 | 2,800 | 2,041 |
| August 9 | 1,329 | 669 | 2,660 | 366 | 5,819 | 224 | 2,748 | 1,910 |
| August 16 | 1,374 | 649 | 2,493 | 363 | 5,718 | 192 | 2,753 | 1,813 |
| August 23 | 1,301 | 652 | 2,478 | 346 | 5,360 | 200 | 2,571 | 1,695 |
| August 30 | 1,163 | 639 | 2,395 | 337 | 5,093 | 171 | 2,417 | 1,649 |
| September 6 | 1,188 | 537 | 2,337 | 275 | 4,879 | 202 | 2,366 | 1,658 |
| September 13 | 1,138 | 589 | 2,341 | 321 | 4,648 | 215 | 2,391 | 1,553 |
| September 20 | 1,015 | 497 | 2,329 | 292 | 4,573 | 151 | 2,293 | 1,600 |

| Week ending | Ark. | La. | Texas | Wash. | Oregon | Calif. | Total 22 areas 1958 | 1957 |
|---|---|---|---|---|---|---|---|---|
| July 19 | 3,137 | 474 | 2,401 | 381 | 199 | 1,093 | 33,184 | 28,740 |
| July 26 | 3,074 | 456 | 2,406 | 420 | 161 | 1,081 | 32,663 | 28,388 |
| August 2 | 2,979 | 438 | 2,353 | 313 | 156 | 1,090 | 31,685 | 27,510 |
| August 9 | 2,934 | 443 | 2,282 | 388 | 179 | 1,049 | 31,246 | 27,055 |
| August 16 | 2,778 | 392 | 2,196 | 374 | 205 | 978 | 30,541 | 26,625 |
| August 23 | 2,816 | 457 | 1,948 | 359 | 165 | 905 | 29,098 | 25,934 |
| August 30 | 2,587 | 373 | 1,869 | 344 | 125 | 824 | 27,886 | 25,490 |
| September 6 | 2,381 | 395 | 1,898 | 359 | 168 | 878 | 27,218 | 25,228 |
| September 13 | 2,283 | 400 | 1,740 | 342 | 174 | 916 | 26,335 | 25,028 |
| September 20 | 2,165 | 355 | 1,618 | 249 | 193 | 821 | 24,803 | 24,298 |

## MARKETS

(Continued from page 2)

iny feed was weak and down $1.50 to $2, gluten feed and alfalfa meal were steady.

Millfeed prices rose under replacement demand by the country trade. Demand centered mostly in bran.

Running time of formula feed manufacturers averaged 40 hours last week.

### Central States

Feed business during September has been satisfactory to most manufacturers, reports indicate. Although volume is down from the peak attained during record-setting months earlier this year, tonnage generally is above the same period a year ago.

Good markets and the number of animals on feed are the twin reasons for sustained movement. And, the outlook is for business to stay good for the remainder of the year. There is some chance that it will improve in the next few weeks ahead. September frequently is a slow month, since it seems to be a transition period between two seasons. Some consuming and marketing segments of the industry try to hold inventories low in the hope that the harvest will bring lower prices.

Observers say turkey, hog and cattle feeds are stronger this week, but that poultry feeds are not moving as well as might be expected.

### Southeast

After a relatively slow July and August feed demand in the territory, September has bounced back and held very well. Poultry feeds have been steady to good right along, even with reduced baby chick placements during recent weeks. This, of course, is due to the fact that placements were heavy earlier and the matured birds from the heavier placements are still on feed in many cases. During the week ending Sept. 13 in the north Georgia broiler section, chick replacements continued a downward trend and were 8% less than that number placed the same week last year. Broiler prices have been weak and are expected to weaken further during the fall months, before they get better.

Dairy feeds are picking up steadily after a slow period when pastures were in better condition. Hog feed business is good and expected to remain that way at least for the time being, due to a considerably larger number of animals to be fed. Cattle feeding operations in the southeastern states are not expected to be nearly so good from the volume standpoint this season as compared with last year. Supplies of feeder type cattle continue to move out of

this territory to other sections of the country.

Heavy rains this week throughout the lower Mississippi Valley, Louisiana, Alabama and Georgia, have slowed the movement of cottonseed to crushing oil mills and in some cases, all mills which have just begun operations a short time ago have completely shut down until more seed is available.

Soybeans in the Mississippi Valley are not expected to begin moving in any volume before Oct. 15 to 20. Carolina beans are expected to be available in late October and early November.

It is estimated that 25% damage has been done to the cotton crop due to the recent heavy rains. Corn supplies in the Southeast are moving in considerable volume and sale prices have been lowered each week as movement picked up. It is reported that farmers are very disappointed with present prices being paid, and some of the trade feels that prices are as low as they can go in order to keep supplies coming in.

## California

The weather was very hot and humid this past week and there was a noticeable drop-off in the consumption of grains and feeds by both poultry and cattle.

Egg prices were very steady with large sizes at 48@48½¢ and medium sizes at 38½¢. Most feed ingredients were in good supply with one or two exceptions such as degossypolized cottonseed meal and soybean meal especially for close-in material.

Feeding ratios for egg producers were very favorable throughout August as the result of high egg prices and lower feed costs. As of Aug. 15 a dozen eggs would purchase 13.49 lb. of feed compared with 11.30 lb. a month earlier. Cattle feeding operations in the commercial lots continued about unchanged but the numbers on feed remained down somewhat from peak levels.

## Ohio Valley

Sales of formula feeds held steady this week in the Ohio Valley, and no appreciable upturn in volume is expected so long as the mid-70 temperatures continue to provide ample pasturage. Other sales-hampering factors are the farm crops, which are more abundant than in many years.

But frosty weather cannot be too far in the future, and when it arrives, area manufacturers anticipate considerable business pickup, especially for poultry and hog fattening feeds. Because of the improved economic outlook, turkey growers are especially optimistic about the approaching holiday volume of sales.

The long-term outlook also was stimulated this week when several inches of rain fell during sveral days to soak the parched ground plentifully and relieve any threat of an early winter drouth in the valley area. Favorable ingredient and farm animal prices are expected to help the situation also.

Most area mills continued operations this week with five-day shifts, with second-shift activities in some plants to meet special situations.

## South Central

There is little change in the level of formula feed buying this week. A few reports were heard that demand was not as brisk as early in the month but mills have had no difficulty in operating full shifts for five days. It was generally agreed that sales were well ahead of last month and of last year also.

Turkey feed deliveries are probably at their season's peak and a rapid slackening in demand is looked for. The usual fall pickup in layer feeds is in progress although increasing more slowly than hoped for. Hog feeds continue to lead in total sales.

Booking plans for cattle and dairy feeds are being offered. Reluctance of cattle feeders to fill feed lots at present prices has limited acceptance of the plans, so far. Mill managers, however, are confident that the lots will eventually be filled and that a good cattle feeding season is ahead.

## Pacific Northwest

Pacific Northwest feed ingredient listings again followed an irregular price trend under the continued influence of mixed supply and demand conditions.

Representative feed mixers indicated that some supplies were temporarily short of the full trade call while other items were readily available.

Price cuts for wheat millfeeds, fishmeal and whole corn were partially offset by small advances for soybean meal, whole barley and oats. Other feedstuffs sold steady and unchanged from the previous trading period.

Wheat millfeed listings were $2 ton lower, fish meal sold 5¢ a protein unit lower and corn values were down 50¢. Advances of 50¢ to $1 ton were posted by soybean meal, whole barley and oats.

Formula feeds continued to move in good volume with poultry mashes setting the pace. Dairy rations faced a moderate outlet with most producers continuing supplemental feeding.

Most lower Oregon and Washington ranges and pastures benefited by recent rains with new growth beginning to show. Livestock are moving out of higher elevations to winter ranges at lower levels. Fall cattle marketings are now underway in the producing areas and supplemental hay feeding is reported in many Willamette Valley areas.

A seasonal production change forced Portland and Seattle dealers to lower large egg listings by 5 to 7¢ doz. with medium AA eggs unchanged to 2¢ higher and AA small eggs 2 to 3¢ up.

Frying chicken prices were unchanged to 1¢ lower than last week at 16 to 17¢. f.o.b. Willamette Valley ranches. Turkey quotations also held unchanged.

Fed steer prices were strong to 25¢ cwt. higher with good and choice ones selling within a $26.25 to $26.75 range.

# INDEX OF ADVERTISERS

**The index of advertisers is provided as a service to readers and advertisers. The publisher does not assume any liability for errors or omissions.**


Abbott Laboratories .....36, 37
Academic Press, Inc. .....
Aeroglide Corporation .....
Agricon, Inc. .....
Agri-Tech, Inc. .....
Agri-Tec Steel Corp. .....
Alabama Flour Mills .....
Albers Milling Co. .....
Albumina Supply Co., Inc.... 98
Allied Chemical Corporation, Nitrogen Division ..... 56
Allied Mills, Inc. .....
Amburgo Co., Inc. .....
American Agri. Chemical Co.
American Cyanamid Co. .....20, 21
American Dehydrators Assn...
American Elev. & Grain Div.
American Mill Serv. Co. .....
American Poultry & Hatchery Fed. .....
Anchor Serum Co. .....
Anderson Box Co. .....
Andersons, The ..... 87
Anderson, V. D., Co. ..... 22
Arbor Acres Farm ..... 36
Archer-Daniels-Midland Co. ..
Arkansas Rice Growers Coop. Assn. .....
Arkell & Smiths .....
Armour & Co. ..... 84
Armstrong, O. B. ..... 82
Aubrey Feed Mills .....

Babcock Poultry Farm, Inc. ..
Baker, H. J., & Bro. ..... 86
Baker, J. T., Chem. Co. ....
Barnard & Leas Mfg. Co., Inc. 55
Baroid Division, National Lead Co. .....
Bartlett, C. O., & Snow Co... 39
Bayou Molasses ..... 14
Barton Salt Co., The .....
Bates Grain Co. .....
Baughman Mfg. Co., Inc. ...
Baxter, A. E., Engineering Co.
Beardstown Mills ..... 10
Bemis Bro. Bag Co. .....
Berg, Paul .....
Bigelow Sales Co. ..... 117
Black, Sivalls & Bryson, Inc. .
Blatchford Calf Meal Co. ... 72
Blomfield-Swanson .....
Borden Company ..... 107
Bosworth Commission Co. ...
Bowman Feed Prod. Inc. .... 48
Bradley & Baker .....
Brewers Yeast Council, Inc...
Brower Manufacturing Co. ... 37
Brown, Fred G., Pulv. Co. ..
Bruce Milling Co. ..... 113
Burlap Council, The .....
Burrell, James H., & Co., Inc.
Burrows Equipment Co. ..... 35
Burrus Feed Mills .....
Butler Chemical Co. ..... 23
Butler Mfg. Co. ..... 31

C-K Processing Co. .....
Calcium Carbonate Co. ..... 18
California Pellet Mill Co. .. 52
Caple, A. B., Co. .....
Carey Grain Corp. .....
Cargill, Inc. ..... 103
Carson Food Co. .....
Champion Portable Mill Co... 14
Chantland Mfg. Co. .....
Chase Bag Co. ..... 100
Checkerboard Grain Co. .... 118
Chemo Puro Mfg. Corp. ....
Citrus Processors Assn. .....
Cleveland Vibrator Co., The..
Clinton Corn Processing Co...
Clofine, Herbert K. .....
Colby Milling, Inc. .....
Collier Livestock-Feeder Co...
Colonial Poultry Farms .....
Columbia Phosphate Co. .... 42
Columbia Quarry Co. ..... 97
Columbian Steel Tank Co. ... 48
Commercial Solvents Corp. .....5, 9, 12, 13
Consolidated Blenders, Inc. .. 117
Consumers Soybean Mills ....
Continental Grain Co. ..... 117
Corn Products Sales Co. ....
Coronet Phosphate Co. ..... 101
Crete Mills ..... 56
Cromwell Paper Co. .....
Crown Zellerbach Corp. ....

D. C. A. & Co. .....
Daffin Mfg. Co. ..... 49
Dannen Mills, Inc. ..... 15
Davis, H. C., Sons' Mfg. Co.
Dawe's Laboratories, Inc. ... 91
Day Company, The .....
Daycom, Inc. ..... 28
Delaware Poultry Laboratories
Devold, Peder, Oil Co. .....
Diamond V Mills, Inc. .....
Distillation Products Industries 93
Distillers Feed Research Council .....
Doane Agricultural Serv., Inc.
Doane Feed Products Co. ....
Dorsey Trailers .....
Doty Laboratories ..... 94
Douglas Chemical Co. .....
Duplex Mill & Mfg. Co. .... 16
Du Pont de Nemours & Co., Inc., E. I. .....

Early & Daniel Co. .....
Eastman Chemical Prod., Inc. 98
Ehrsam, J. B., & Sons Mfg. Co., The ..... 45
Elam Grain Co. ..... 87
Entoleter Division, Safety Industries, Inc. .....
Eriez Mfg. Co. .....
Eschenheimer, Rudy, Co. ..... 44
Eshelman, John W., & Sons .
Ewing, Ray, Co. ..... 22

Farm Journal .....
Farmers Mutual Hail Ins. Co. of Iowa .....
Feed Service Corp. .....
Fischbein, Dave, Co. .....
Flavor Corp. of America ... 78
Flour Mills of America .....
Food Mach. & Chem. Corp.
Forster Mfg. Co. ..... 95
Fox Co. ..... 58
Fox Valley Milk Feeds, Inc. .
Fruen Milling Co. ..... 7

Gaddis Bros. Mfg. Co. .....
Geerlings Feed Mills .....
Glidden Co., The .....
Gold Kist Peanut Growers ...
Gorton-Pew Fisheries ..... 118
Grace Chemical Co. ..... 50
Grain Processing Corp. ..... 89
Grand River Chem. .....
Griffith Labs., Inc. ..... 24
Gump, B. F., Co. ..... 110

Hallet & Carey Co. .....
Hand, Peter, Foundation .... 3
Hardy, H. E., & Co. .....
Hardy Salt Co. .....
Harris-Crane, Inc. .....
Harshaw Chemical Co. .....
Hawthorne Co. .....
Hayes and Stolz ..... 42
Haynie Menhaden Prod., Inc.
Heard-Kinard-Smith, Inc.
Heck, Edward J., & Sons Co.
Heil Co., The ..... 24
Helm Manufacturing Co. .....
Henderson Mfg. Co. .....
Henke Mfg. Co. ..... 108
Hercules Powder Co. .....
Hess & Clark, Inc. ..... 105
Heterochemical Corp. ..... 99
Highway Equipment Co. .....
Hilltop Laboratories .....
Hoffmann-La Roche, Inc. .... 113
Hoffman-Taff, Inc. ..... 110
Hogenson Const. Co. ..... 113
Hogg, N. D., Ltd. ..... 80
Holt Products Co. .....
Homer Mfg. Co., Inc., The
Honeggers' & Co. ..... 34
Honeymead Products Co. .....
Hot Spot Detector .....
Howes, S., Co., Inc. .....
Hubbard Milling Co. .....
Hudson Pulp & Paper ..... 77
Hubbell, Charles H. .....
HyLine Poultry Farms .....

Ibberson, T. E., Co. .....
Illinois Soy Products Co. .... 95
Indian Jute Mills Assn. .....
Industrial Commodity Corp.
Industrial Molasses Corp. ...
International Machinery Dev. Corp. .....
International Minerals & Chemical Corp. ..... 17
International Paper Co. ..... 71
International Salt Co., Inc. ... 83
Iowa Limestone Co. .....
Iowa Portable Mill Co. ..... 58

Jackson, Gilbert, Co., Inc. .. 94
Jacobson Machine Works ... 85
James Mfg. Co. .....
Jersee Co. ..... 103
Johns-Manville .....
Jones-Hettelsater Const. Co. . 71

Kansas Soya Prod. Co., Inc... 90
Kees & Company ..... 58
Kellogg, Spencer, & Sons, Inc. 78
Kem Mfg. Co. .....
Kemp, C. M., Mfg. Co. .....
Kent Feeds .....
Kent, Percy, Bag Co., Inc. ...
Key Alfalfa Dehydrators .... 79
Keystone Steel & Wire Co., 34, 35
Kilby Steel Co. .....
Kindstrom-Schmoll Co. .....
Koelsch, Charles J., Grain Co.
Koppers Co., Inc. .....
Kraft Bag Corp. .....
Kraft Foods Co. ..54, 55, 100, 108
Kuss, R. L., & Co., Inc.....

Laboratory Construction Co. .
LaBudde Feed & Grain Co... 99
Land O'Lakes Creameries, Inc.
Landers Mill Mfg. Co. .....
Lathrop's Hatchery, Inc. ....
Lauhoff Grain Co. .....
Leach Mfg. Co. ..... 99
Leftwich, J. H., & Co., Inc... 39
LeGear, Dr., Inc. .....
Lennox Industries, Inc. .....
Levens Mfg. Co. .....
Lilly, Eli, & Co. .....46, 47
Lima Armature Works .....
Limestone Products Corp. of America ..... 92
Linck, O. E., Co., Inc. .....
Loncala Phosphate Co. ..... 35
Longhorn Eng. Co. ..... 10

M-G-R Feed Co., Inc. .....
McCabe Grain Co., Ltd. .....
McCall, Tom, & Associates, Inc. .....
McClelland, M. A. .....
Magnus, Mabee & Reynard ..
Maney Bros. Mill & Elev. Co. .....4, 118
Marco Chemical Co. ..... 74
Martenis, C. J., Grain Co...
Martin, Theo. W., & Son ...
Mathews Co. .....
Mayo Shell Corp. ..... 39
Melos Mfg. Co. .....
Merchants Chemical Co., Inc. 94
Merck & Co. .....29, 30
Mid-Continent Grain Co. ..... 58
Midland Western ..... 117
Midwest Alfalfa Co. ..... 51
Mid-West Business Exchange.. 112
Midwest Dried Milk Co. ..... 58
Milbrew Co. .....
Mill & Elevator Co. .....
Miller Manufacturing Co. ...
Miller, Mel, & Co., Inc. .... 80
Milller Publishing Co., The .. 106
Milligan & Son .....
Minneapolis Sewing Mach. Co.
Minnesota Linseed Oil Co. .. 51
Minnesota Specialty Co., Inc.
Monsanto Chemical Co. .....
Morse Boulger Destructor Co.
Motomco, Inc. .....
Morton Salt Co. ..... 73
Murphy Products Co. .....
Myers-Sherman Co. ..... 103

Nagel, Herman, Co. ..... 42
Natl. Alfalfa Dehydrating & Mlg. Co. .....
Natl. Cottonseed Prod. Assn., Inc. .....
Natl. Distillers Prod. Co. ...
National Feed Ingred. Assn...
National Lead Co. ..... 16
National Molasses Co. .....
National Oats Co. .....
National Renderers Assn. ..... 76
National Turkey Federation Underwriters .....
National Vitamin Products Co.
Nellis Feed Co. ..... 71
New Century Co., The ..... 82
New England By-Prod. Corp... 118
Nichols, Incorporated .....
Nootbaar, H. V., & Co. .....
Nopco Chemical Co. ..... 76
North American Mfg. Co. ...
North American Trading & Import Co. ..... 81
North Carolina Granite Corp. 56
Northwest Brewers Yeast, Inc.
Nor-Vell, Inc. .....
Nutrena Mills, Inc. ..... 103
Nutri-Lab Mixing Corp. .....

Oakes Mfg. Co. .....
Olavarria & Co., Inc. .....
Omega Machine Co., Div. of B-I-F Industries, Inc. ...
Oyster Shell Corp. ..... 89
Oyster Shell Prod. Co. ..... 82

Pabst Brewing Co. ..... 11
Paper-Calmenson & Co. .....
Park, Philip R., Inc. ..... 61
Parks, J. P., Co. .....
Parrish & Heimbecker .....
Parrish, N. K. .....
Paxton Processing Co. ..... 117
Pay Way Feed Mills, Inc. ... 37
Peavey, F. H., & Co. ..... 110
Peerless Equip. Co., Inc. ...
Penick, S. B., & Co. .....
Permco Mfg. Co. .....
Pfizer, Chas., & Co. .....40, 41
Phelps Dodge Refining Corp.
Pillsbury Co., The .....
Pittsburgh Plate Glass Co. .. 110
Pless & Sheahan .....
Power Curve Conveyor Co. ..
Prater Pulverizer Co. ..... 18
Pratt Labs., Inc. .....
Productive Acres Mfg. Co. .. 78
Publicker Industries, Inc. ....

Quaker Oats Co. ..... 53
Quisenberry Mills .....

Ralston Purina Co. ..... 19
Ranger Equipment Co. .....
Rapids Machinery Co. ..... 75
Raymond Bag Corporation ... 38
Read, Gladwin A., Co. .....
Red River Alfalfa Co. .....
Red Star Yeast & Prod. Co. .. 25
Rees Blow Pipe Mfg. Co. ..... 92
Reliance Feed Co. ..... 90
Rhodia, Inc. .....
Richardson, James, & Sons ..
Richardson Scale Co. ..... 28
Riley Feed Co. ..... 24
Rion Crush Stone Corp. ....
Ripco, Inc. .....
River Rest Turkey Saler Inc.
Robinson Conveyor Systems .
Rohloff Bros., Inc. .....
Rolfes Grain Aeration Sys. .. 43
Roskamp Huller Mfg. Co., Inc.
Rosner-Hixson Laboratories ..
Ross Machine & Mill Supply..
Ruttger's Minnesota Lodges ..
Ryde & Co. .....

S & O Products .....
St. Regis Paper Co. .....
Safety Industries, Inc. .....
Salsbury's, Dr., Labs. .....59-70
Save-Way Feed Mills ..... 75
Scanlan, Ivan, & Co. .....
Schenley Distillers, Inc. .....
Schipke, Henry, & Assoc. .....
Schuster-Wise Gr. & Feed Co.
Schutte Pulverizer Co., Inc...
Scroggins Grain Co. ..... 84
Seagram, Joseph E., & Sons, Inc. .....
Seco, Inc. .....
Sedberry, J. E., Inc. ..... 104
Seedburo Equipment Co. .... 72
Service Bureau Corp. .....
Sheahan, Robert F. .....
Shell Chemical Co. .....
Shellbuilder Co. ..... 99
Sievert, C. W., & Associates. 93
Simonsen Mfg. Co. .....
Small, The W. J., Co. ..... 4
Smith, Edward E., & Co. ....
Soft Phosphate Research Inst. 109
Sohio Chemical Co. .....
Soluble Nutrients, Inc. .....
Southwest Mill Supply Co. ... 113
Sparks-Waters-Farnen, Inc. ..
Special Products, Inc. .....
Specifide, Inc. .....
Spencer Kellogg & Sons, Inc.. 78
Springer Pub. Co. .....
Sprout, Waldron & Co., Inc.. 89
Squibb, E. R., & Sons .....
Stabilized Vitamins, Inc. .....
Staley, A. E., Mfg. Co. ..... 114
Staley Milling Co. ..... 122
Standard Brands, Inc...14, 18, 80
Standard Feed & Fert., Inc...
Stauffer Chemical Co. .....
Stephens-Adamson Mfg. Co. .
Sterwin Chemicals Inc. ..... 57
Stone Mountain Grit Co....44, 45
Strong-Scott Mfg. Co. .....
Sudanga Industries .....
Sunset Feed & Grain Co. ....
Superior Feed Co. .....
Swanson, Carroll, Sales Co...
Swift & Co. .....
Syntha Lab. .....

T. D. F. Company .....
Taste Engineering, Inc. ..... 7
Texas Mill Equipment Co. .... 90
Thayer Scale Co. ..... 96
Thomer Equipment Co. .....
Thompson Printing Co. .....
Ti-Co Industries .....
Tobias Enterprises ..... 36
Toxite Laboratories .....
Truck Grain Blower Co. .....

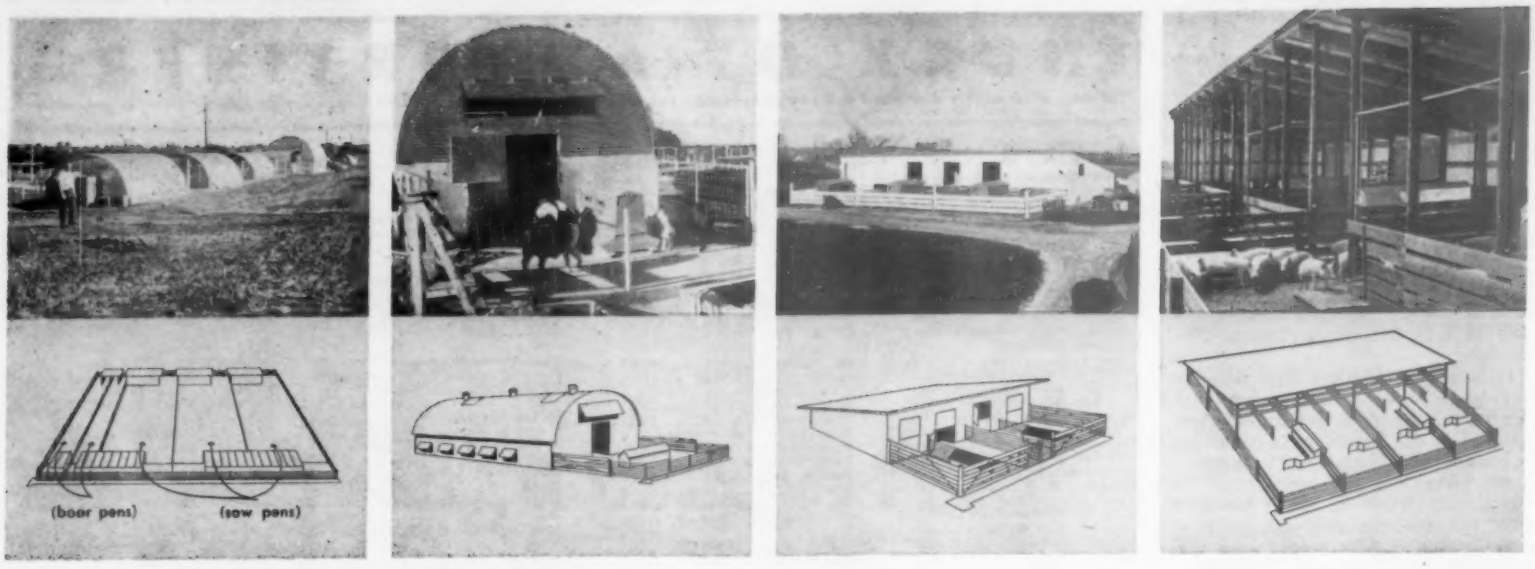
Ultra-Life Laboratories, Inc... 87
Union Bag-Camp Paper Corp.
Union Special Machine Co. ..
U. S. Industrial Chem. Co. .. 33
Universal Hoist Co. ..... 90
Upjohn Company, The .....

Van Camp Lab. .....
Van Dusen Harrington Co. .. 110
Vantress, Chas., Farms, Inc...
Van Waters & Rogers, Inc. ..
Vineland Laboratories, Inc. ..
Vitamins, Inc. ..... 54
Vitaway, Inc. .....
Vitren Corp. .....
Vy Lactos Laboratories, Inc... 111

W-W Grinder Corporation .. 100
Wallace & Tiernan Inc. ...
Warren-Douglas Chemical Co. 35
Wells, Ralph, & Co. .....
Wenger Mixer Mfg. Co. ..... 80
Wertz Feed Co. ..... 97
Western Condensing Co. ....
Western Yeast Co. .....
West Virginia Pulp & Paper Co. .....
White Laboratories, Inc. ....
White Shell Corp. .....
Whitmoyer Laboratories, Inc.. 97
Whitten Co. .....
Wilhoit Laboratory ..... 111
Wilson & Co., Inc. .....
Wilson, R. S., Co. ..... 113
Wirthmore Feeds .....
Wisconsin Alumni Research Foundation ..... 93
Woodington Elev. .....
Woodward & Dickerson, Inc...

Younglove Construction Co...
Young, John F., Co. .....

Zellers' Laboratories .....




*This is the way to sell more hog feed...by the ton...in bulk or bags*

# The Hottest Thing Going

## in Multiple Farrowing...in Steadier Year-'round Sales...in Greater Dealer Profits

**Dealer tonnage has soared since the Staley Milling Company's PROFESSIONAL® Multiple Farrowing Program was pioneered 1½ years ago.**

### What this Multiple Farrowing Program Has Meant to Hundreds of Dealers!

1. Greater feed sales to **established** customers who quickly saw the profit advantages of this PROFESSIONAL Hog Program, and increased their hog production.
2. **New** customers who were attracted by the greater profits made possible by this PROFESSIONAL Program . . . and who were subsequently sold on PROFESSIONAL Feeds.
3. Steadier year-round sales to customers on the PROFESSIONAL Multiple Farrowing Program . . . leaving more free time to drum up new business.
4. Greater sales of starting, growing, and finishing feeds . . . because farmers on the PROFESSIONAL Program rapidly realized they made much more money by feeding properly balanced supplements on a definite program.
5. Long-lasting customer loyalty on this tested, farm-proved swine program.
6. Invaluable "word-of-mouth" customers advertising and national magazine, radio, and TV advertising—selling **your** PROFESSIONAL **Feeds** . . . **your** PROFESSIONAL Farm Supply Headquarters . . . **your** PROFESSIONAL Feeding Programs.

### Here's why you should join the swing to PROFESSIONAL Feeds and this Plan.

**Gain this Valuable Program! Become a PROFESSIONAL Feed Dealer!**

**Today** there are several hundred units in operation and being built by practical farmers throughout the Midwest. Chances are, several units may be starting in your locality . . . producing anywhere from 500 to 1,500 hogs a year *on a continuous basis.*

**This Means Tonnage** . . . big tonnage. Take advantage of the Staley Milling Company's PROFESSIONAL Multiple Farrowing Program. Increase your profits. Clip out the post card. Fill in your name and address. Mail it. *Right Now!*

PROFESSIONAL® FEEDS

Products of the **STALEY MILLING COMPANY**
Kansas City & St. Louis

No. 1631-58

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY MAIL
First Class Permit No. 4350, Sec. 34.9 P. L. & R., Kansas City, Mo.

**STALEY MILLING COMPANY**

KANSAS CITY 16,

MISSOURI

FOLD OVER ON THIS LINE . . . FASTEN (STAPLE, GLUE, TAPE)

☐ You've got me interested. I understand that by becoming a PROFESSIONAL Feed Dealer I will receive, *free*, a set of Multiple Farrowing Program Plans, all the literature I need for my customers, and the use of slide films and merchandising aids that are especially suited to my area. Send me the details.

☐ Better yet. Send one of your experienced territory managers to see me. I want to know the full facts. I'd like proof that I can make more money as a PROFESSIONAL Feed Dealer.

Name_____

Firm_____

Address_____

Town_____ State_____